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Railway Age

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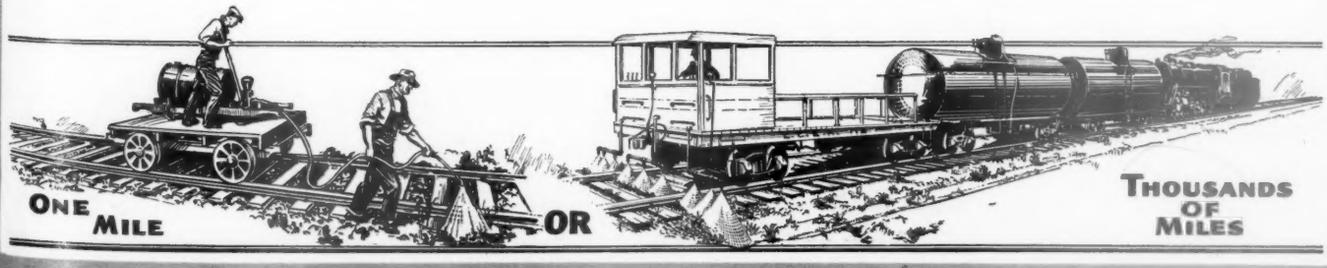

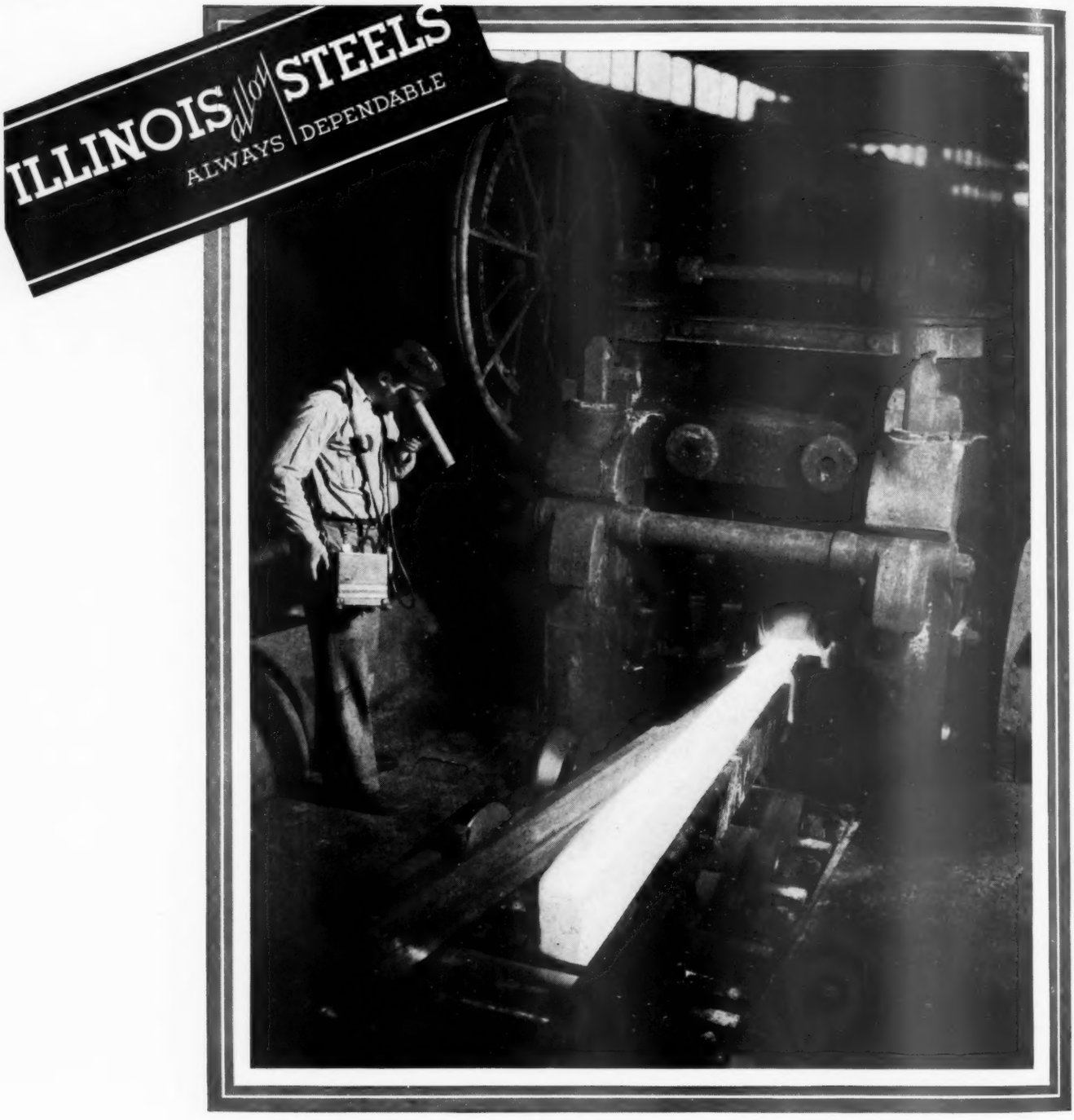

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In This Issue

Milwaukee Buys Steam Locomotives for Fast Schedules.....Page 719

A comprehensive description of this new motive power built by the American Locomotive Company for smooth operation at high speeds and styled for public appeal.

Hiawatha Cars As Spectacular As the Locomotives..... 726

An article on this new Milwaukee light-weight train which embodies ultra-modern conveniences and is notable for beauty of line and color.

Two Views on the Grade Crossing Problem..... 739

Presents two discussions of the causes of accidents and their prevention—one by a railway officer and the other by a spokesman for the highway users.

EDITORIALS

Business, Politics and Economic Problems..... 715
Signaling for Modern Train Speeds..... 717

GENERAL ARTICLES

Milwaukee Buys Steam Locomotives for Fast Schedules..... 719
Hiawatha Cars As Spectacular As the Locomotives..... 726
Freight Car Loading 732
Railroad Pension Act Held Unconstitutional..... 733
Two Views on the Grade Crossing Problem..... 739
Tie Producer Adopts Grade Marking..... 742
Traffic Clubs Meet at Virginia Beach..... 743
Extension of Labor Restrictions Predicted..... 747

NEWS 749

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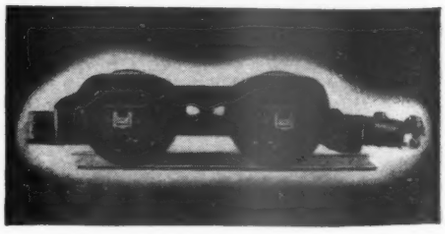

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RAILWAY AGE

Business, Politics and Economic Problems

During the recent annual meeting of the Chamber of Commerce of the United States the embattled business interests of the country rose against the New Deal.

Two years ago this paper already was opposing some of the most important of the New Deal legislation enacted by Congress in June, 1933. It was especially opposed then to the National Industrial Recovery Act and later to the way it was being carried out, when many business men were enthusiastically for it. A depression is caused by a buyers' strike. Buyers in general begin to refuse to pay prevailing prices for securities and commodities, and thus cease to support prevailing wages. Demand for securities and commodities declines; production of many kinds is reduced; millions are thrown out of employment. We did not believe in N.R.A. because it sought to advance wages and prices and to restrict production when the problem of recovery was essentially that of increasing the demand for many kinds of products, and thereby increasing employment in their production and distribution.

We did not believe in monetary inflation because we believed the causes of the depression were economic, and could be removed only by changing essentially economic conditions. We did not believe in any policy of reducing, or temporarily restricting, profits, whether by advancing wages or otherwise, because the most depressed industries were those producing capital goods, and buying from them is done by other industries directly or indirectly from profits. We were opposed to large government expenditures to "prime the pump" of industry because we believed they would take capital that needed to be used currently to revive private business, and would later increase the tax burden of private business.

Results of "New Deal" Policies

The results of these policies have been worse than we anticipated. Railroad car loadings are the best single measure of total production and distribution. In June, 1933, when all the original "recovery" legislation was enacted, recovery already was well under way, and car loadings were 15 per cent larger than in June, 1932. In June, 1934, they were only 6 per cent larger than in June, 1933. In the year ended on May 1, 1935, they were almost exactly the same as in the year ended on May 1, 1934. In the first one-third of 1935 they were slightly smaller than in the first one-third of 1934.

In appraising the New Deal it is necessary, however, to be more discriminating than most persons are. It presents both political and economic issues. Republican politicians are disposed to condemn all policies that can be attributed to the Roosevelt administration. Many business men now condemn New Deal policies for which they themselves are largely responsible, because originally they did not oppose them or actually favored them.

Politics, Business and Economics

Some Republican spokesmen have criticised or belittled the National Housing Act. This is, in fact, a constructive measure which is effectively promoting private investment and expenditures for residential construction, modernization and repairs, and has been endorsed by the Durable Goods Industries committee and the Chamber of Commerce of the United States. Some Republican newspapers opposed as so-called "reform" measures the bills supported by the Roosevelt administration for regulating the water and highway competitors of the railways, thus trying to make political issues of measures that are supported by many who are opposed to what may properly be classified as "New Deal" policies. Many Republican members of Congress, while ostensibly opposed to extravagant government expenditures, supported the indefensible "prevailing wage" amendment to the work relief-bill, which the Roosevelt administration opposed, and favor raiding the public treasury by veterans' bonus legislation, which the Roosevelt administration also opposes.

Many business men rushed into N.R.A. in the hope and expectation that it would reduce competition, fair as well as unfair, in their industries. They are now opposed to it because of its tendency to raise wages

more than prices, although advances in prices and wages were equally undesirable at the stage of the depression reached in the summer of 1933. Many business interests that are now demanding large reductions of government expenditures to balance the national budget were among the first and most enthusiastic in advocacy of large government expenditures upon highways, waterways and other public works which they hoped would benefit their own business.

What Are the Real Issues?

If the economic problems with which the country is faced are to be solved by political and business leadership, there must be introduced into discussion and action more economic intelligence, consistency and fairness.

What are the principal issues? First, how much government interference shall there be in business? Second, how large shall government expenditures be, and what shall they be made for? Third, shall the aim of government and business be equality of income, or equality of opportunity, or what?

Radicals of every color advocate "reform" by government coercion to reduce and prevent economic "exploitation." Communists would go to the extreme of establishing by force a political and economic system which would virtually equalize all incomes. Others ostensibly less extreme advocate government expenditures and disbursements large enough to make the average income of the beneficiaries as large as the average income of persons doing productive work for wages in private industry.

"Economic Equality"—What Is It?

The principal demand of the radicals is for "economic equality." What is "economic equality?" To the communist it is equality of income. But suppose one man can and does lay twice as many bricks as another. Is it "economic equality" to pay them the same? Obviously, if the incomes of all were made equal nobody would do work of any greater amount or value than the laziest and most inefficient, unless coerced. They tried equal pay and coercion in Russia, but they did not get results and they have had to resort to unequal pay.

How far should this policy of allowing wages, salaries and profits proportionate to the amount and value of the work done be carried? This actually is the fundamental issue presented by all current economic problems and proposed solutions. The most significant part of the Ford exhibit at the Century of Progress in Chicago in 1934 was the small work shop in which Henry Ford began, with his own hands, to create the largest manufacturing industry ever created by one man. There are millions on relief today who could scrape together as much equipment as Henry Ford began with. Why don't they do it, and make for themselves a manufacturing industry and fortunes such as Henry Ford made for himself, Senator Couzens and his other original stockholders? Perhaps some of them will. Why won't others? Because they haven't initiative and ability enough. No person of initiative and ability ever wanted, wants now or ever will want equality of income. Its establishment would make the work of the least industrious, efficient and ambitious the common denominator of the work of all. And every policy adopted solely to reduce the difference between incomes will reduce the incomes of all by reducing the efforts and incentives of those having more than average energy and ability. The only kind of economic equality that can be established with benefit to anybody is equality of economic opportunity.

The denial of such equality of opportunity is due to the abuse of two kinds of power—economic and political. Leaders in business often use economic power due to "inside information," or monopoly or quasi-monopoly, to make speculative profits at the cost of their own stockholders, or to charge excessive prices, or to pay too low wages. It is also true, however, that the power of government is often used by minorities with political influence for economic exploitation. It is by the use of political influence that veterans' organizations secure the passage of bonus legislation which exploits all the rest of the people. It is by the use of political influence that organized labor seeks to secure legislation to establish a 30-hour working week at 40 hours' pay, the effect of which would be to exploit the great majority.

The use of political influence is responsible for protective tariff policies, which, by restricting imports, also restrict exports, especially of farm products, and exploit the farmers by compelling either disparity between industrial and farm prices or curtailment of farm production. Political influence has been responsible for government policies of regulating the railways without subsidizing them, and subsidizing their competitors without regulating them. The economic power of the railway labor unions has been supplemented by their political power in enabling them to exploit the railways and those who pay railway rates through wages and working conditions the cost of which is not warranted by railroad and economic conditions.

No doubt those are right who believe it a proper function of government to combat economic exploitation. But by what means is such exploitation by the use of the power of government itself to be prevented? The answer of many business men is that government interference with business and government expenditures should be reduced. But where, how and how much do they actually want them reduced? Are many of them still naive enough to believe that they ever will be allowed to establish and maintain virtual monopolies and monopoly prices without government interference? Are they in favor of abolishing the kind of government interference represented by protective tariffs? Are they in favor of abolishing government subsidization of competition with the railways, as well as government subsidization of competition with other indus-

tries? Are those who oppose regulation of carriers by waterway and highway in favor of abolishing all regulation of railways?

What Do Business Men Really Want?

The plain fact is, that many business men don't want the use of economic and political power for exploitation reduced any more than any other class. They want to retain and use all the economic power they think will serve their purposes. They want the government to regulate and subsidize to whatever extent will be to their particular advantage—but not in any way that will be to their disadvantage. But that happens to be just what is wanted by those for whom the radicals speak!

The average income of all persons gainfully employed in this country is now about $1,100 a year. The radicals have many supporters with incomes twice that large. None of these wants his income reduced in order to increase the incomes of those receiving less. They applaud and support Huey Long, Coughlin and the rest of the "share-the-wealth" propagandists because they want part of larger incomes added to theirs. They are socialists, whether they know or not. But the business man who wants the regulating, taxing and spending power of government used for his benefit is just as much a socialist. Such policies very rarely increase the total national income. Usually, in changing the distribution of it to the advantage of some and the disadvantage of others, they hinder its increase. It is just as socialistic to favor government policies of regulation and subsidization which divert earnings from the railways and manufacturers of railway equipment and supplies to competing carriers, highway builders, waterway builders and manufacturers of highway and waterway vehicles, as it is to favor government policies to divert income from those with more than average incomes to those with less than average incomes. The principle, purpose and effects are the same.

Equality of Opportunity for Railways

In their program the railways ask for "equality of opportunity in competition." Such equality of opportunity can be established only by establishing equality of subsidization and regulation. Equality of economic opportunity cannot exist as long as either economic or political power is effectively used for exploitation. This paper will believe that Republican politicians are opposed to certain New Deal policies because they are socialistic and contrary to the public interest when Republican politicians quit participating in the use of government power for the exploitation of industries and classes regarded by them as politically unimportant. It will begin to believe in the sincerity of many business men who profess to oppose certain New Deal policies as socialistic and contrary to the public interest when these business men cease to hand-pick socialistic policies in order to select for their favor those they believe will benefit them regardless of whom they will hurt, and for their opposition those they believe will hurt them regardless of whom they will help.

Signaling for Modern Speeds

The inauguration of schedules for passenger trains of both light-weight Diesel-propelled and standard steam-operated designs, involving operation at speeds of 90 to 100 miles an hour, directs attention to the necessity for the revision of the spacing of automatic signals and the replacing of antiquated types with modern signals.

Tests made recently by the Burlington, as described in the *Railway Age* of March 23, have demonstrated that the braking facilities on the new Diesel-propelled trains will bring these trains to a stop, from speeds of 100 miles per hour, in practically the same distance that is required to bring an ordinary steam passenger train to a stop, from a speed of 65 to 70 miles an hour, with the brake equipment commonly used. To the extent that similar braking equipment is installed on the light-weight trains which other roads are placing in service, there would seem to be no necessity for extensive changes in signaling, except where the signaling is not now located for speeds of even 70 m. p. h.

However, the speeding up of six- and seven-car trains drawn by steam locomotives introduces more serious problems, for it cannot be assumed that the braking distance for trains moving at high speeds will be the same as that for trains operated at slower speeds, unless changes are made in the braking system.

Although the respacing of signals has been brought more forcibly to attention by the introduction of these new trains, the problem of inadequate braking distance has been becoming more acute for several years on numerous roads by reason of the gradual increase in the speeds of passenger as well as freight trains. The problem is perhaps more serious with freight trains, with their increasing length and tonnage, for the operation of such trains at 50 to 60 m.p.h. is no longer uncommon. The necessity for the respacing and rehabilitating of the signaling to meet train-operating conditions is not confined, therefore, to the few roads which are putting on these spectacular high-speed trains, but is the problem of many other roads as well.

Proper braking distance can be provided by changing the signaling in several ways. As a part of its electrification program between New York and Washington, the Pennsylvania installed practically an entirely new system of automatic wayside block and cab signaling, using blocks averaging 8,000 ft. in length, with three-aspect, two-block signaling for train speeds of 90 miles per hour, while on its double-track territory between Ft. Wayne, Ind., and Hobart (Chicago) the automatic blocks have been rearranged and lengthened.

On the Milwaukee, which will soon introduce high-speed steam-operated passenger service between Chicago and Minneapolis, the signaling on 78 miles of road between Milwaukee, Wis., and Mayfair, Ill., has been rearranged to extend the blocks from an average of 5,100 ft. to approximately 7,600 ft., eliminating a total of 55 signals. On the 32-mile section from Rondout to Chicago, where the number of trains is greater because

of suburban service, it is planned to provide four-aspect signaling at a later date, with blocks somewhat less than a mile in length. On the line between Milwaukee and St. Paul the signals are now spaced about two miles apart, except at interlocking plants and yards where it will be necessary to remove 28 signals and to relocate 24 others.

On the line of the Burlington between Chicago and St. Paul, over which the three-car Zephyr trains operate, braking distance on the multiple-track main line between Chicago and Aurora has been extended by changing the signal controls to present a yellow aspect on two signals approaching a stop signal. On the single and double-track territory between Aurora and Miner, Wis., where two-position semaphore home and distant signals are used, 138 distant signals were moved to provide longer braking distance, while on the double-track section from Miner to St. Paul, where modern color-light signals are used, only four signals had to be moved.

On the Chicago & North Western line between Chicago and St. Paul the signaling on certain sections had previously been modernized as to braking distances over a period of several years. At the present time the enclosed-disk automatic block signaling between Milwaukee and Wilmette, Ill., 70 miles, is being replaced with modern color-light, three-aspect signaling, using blocks averaging about 6,000 ft. Between Highland Park and Wilmette, 9 miles, semaphore signaling is being installed to co-ordinate the operation of through trains with suburban trains, block lengths being adjusted to facilitate train movements and provide adequate braking distances, this part of the program leading to the use of three-block, four-aspect signaling with blocks about 3,000 ft. long in this territory. All of these railroads have, of course, lengthened the controls for highway crossing signals to provide at least 20 seconds warning before arrival of the fastest train.

While these roads have authorized changes in their signaling as a part of their programs for high-speed train operation, the fact remains that on these roads, as well as on many others, the spacing of the signals may not have kept pace with the increases in train speeds for years. Several train accidents within the past year have resulted from enginemen overrunning signals, as on the Florida East Coast where a passenger train ran into an open draw recently where the distant signal was located only 2,628 ft. from the home signal. The signals involved in this accident were installed in 1926, at which time the maximum speed was limited to 50 miles an hour, although in 1930 this limit was increased to 65 miles an hour, with no change in signal spacing or signal indications at this point.

Every road which has not already done so can well afford to direct its signal engineer to make a careful check of his signaling with reference to train speeds and braking distances to determine those changes which should be made. The so-called "lazy method" of using a caution aspect on two signals in the approach to a signal indicating "stop" should be adopted only as a temporary measure, for if enginemen reduce speed in conformance with the Standard Code caution rule through two blocks, schedules will be disrupted. Furthermore, the incorrect use of the caution aspects leads enginemen to form a new conception of its meaning, and results in confusion that may contribute to an accident when they encounter only one caution aspect in approaching a "stop" signal. Where shorter blocks are necessary to handle the traffic, the introduction of four-aspect signaling is the solution.

An Ohio Congressman on the Upper Mississippi

(The following is a letter from Congressman Fred Bierman of Decorah, Iowa, dated April 10, which was published in the Mason City Globe-Gazette under the heading "Criminal and Inexcusable"):

Yesterday the house passed the rivers and harbors bill. There was no mention of the Upper Mississippi channel in the bill which spread over all the United States. I think that is indicative of the opinion that the committee has of the Upper Mississippi.

In February we had some hearings before the review board of the PWA regarding the Upper Mississippi channel. It is shown there that the proponents of this proposition estimate a saving in freight to the users of the channel of a little less than $7,000,000 a year. That is based on a tonnage of more than 10,500,000, whereas the tonnage last year was 146,000. It also assumes a saving of about 70 cents a ton. But at the hearing, we accepted this rosy figure of $7,000,000 annual saving.

The cost of the completed project is estimated by the Mississippi Valley committee as $156,300,000. Assuming that this is one project that will stay within the estimates, and charging 4 per cent interest on that sum, we have an annual interest charge of $6,262,000 on the investment. The army engineers say that it will cost $1,750,000 to maintain the channel and operate the locks. Accept that figure and add to it the 4 per cent interest, and you have a total cost of $8,012,000 a year which the government is put to. In other words, the government is going to be out more than $8,000,000 a year in order to accomplish an estimated saving of about $7,000,000 a year to the shippers who use the channel.

Of course, you understand that the government gets no penny of revenue from any of these river improvements. They operate the locks free of charge and keep the channel dredged out, lighted and marked, all absolutely free of charge.

Seepage damage along the river is going to be a tremendous sum and the law does not allow the government to compensate the landowners for seepage damage. The government compensates for overflow, but seepage damage is called "consequential."

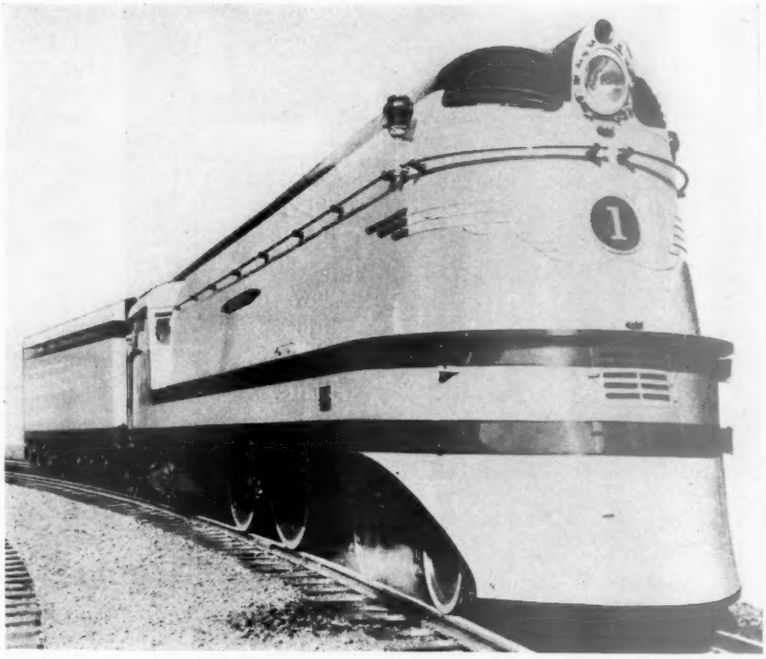
In the lower Mississippi, they are struggling with the flood problem. It is due largely to what the Upper Mississippi and its tributaries do. The nine-foot channel would be made by 27 dams which would back the water up a number of miles above the dams, these pools being maintained at the same level all the time. In other words, all the natural reservoirs for storing flood waters would be kept filled continually. Therefore, when there was a big run off of water, the flood would start immediately.

Yesterday, in the house, I offered an amendment to prohibit the public works administrator from dumping any more PWA money into the channel. The amendment, however, was ruled out on a point of order. It, however, provoked some debate and there was debate on one or two other occasions regarding the channel and no one came to its defense.

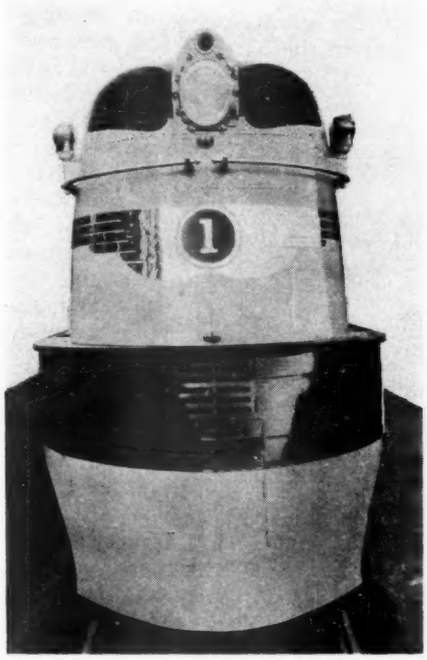
The more I go into this matter the more criminal and inexcusable it seems.

Milwaukee Buys Steam Locomotives for Fast Schedules

Built by the American Locomotive Company for smooth operation at high speeds and styled for public appeal—To operate the "Hiawatha", a fast day train soon to go into service on a six-and-one-half-hour schedule for 410 miles between Chicago and the Twin Cities



ON April 30, in the presence of Governor Herbert H. Lehman of New York and a party of railway and railway supply company officers, William C. Dickerman, president of the American Locomotive Company, officially delivered to H. A. Scandrett, president of the Chicago, Milwaukee, St. Paul & Pacific, the first of two new streamlined high-speed passenger locomotives. They are the motive power for the fast day-train service to be inaugurated on or about May 29 by that road between Chicago and the Twin Cities. This train, to be known as the "Hiawatha," will operate on schedules of six and one-half hours for the 410 miles with five intermediate stops in each direction—an average speed from start to stop of 63.1 m.p.h. and an average running speed of 66 m.p.h.

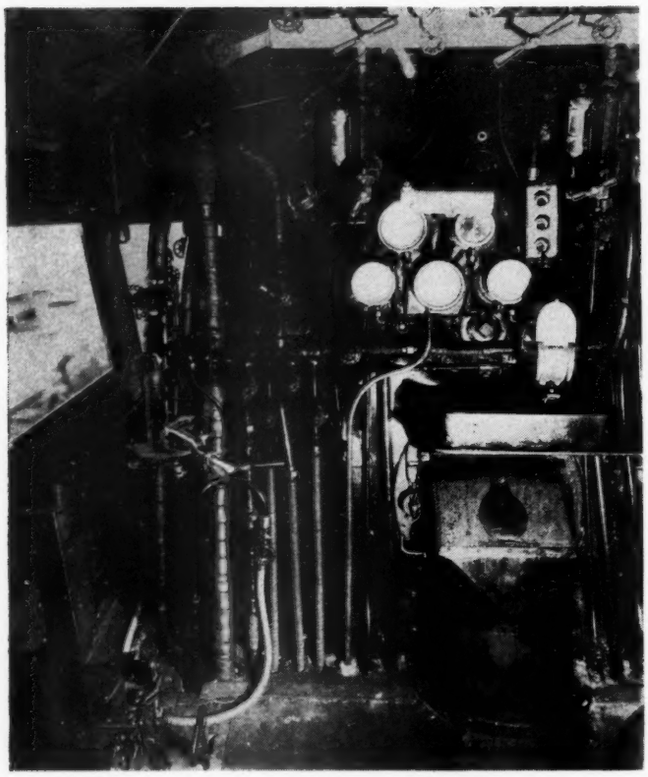


Among the numerous interesting features of these locomotives none is more striking than their exterior appearance. This arises not alone from the complete shrouding of the boiler and the skirting which partially conceals the running gear and motion work, but from the bold use of color and the skillful ornamentation. The finish includes black, gray, orange yellow, maroon and brown, with lettering in gold leaf and the conventionalized Indian headdress on the shrouding front in polished chromium.

In arranging the shrouding and skirting to permit ready access to all concealed apparatus great care and no small amount of ingenuity were exercised to keep the exterior surfaces free from projecting bolt heads and nuts. One or two inconspicuous handles, in most cases, is all that can be seen of a hinged door and no tools are required to unlatch and open the doors.

The locomotives are of the 4-4-2 wheel arrangement with large drivers and ample boiler capacity to handle trains of six cars, weighing about 340 tons behind the tender, at speeds in excess of 90 m.p.h. on level, tangent track for extended periods. The boiler has a total evaporating heating surface of 3,245 sq. ft. and 1,029 sq. ft. of superheating surface and is equipped to burn oil. The total weight of the engine is 280,000 lb., of which 140,000 lb. is on the drivers. The boiler carries 300 lb. per sq. in. working pressure. With cylinders 19 in. by 28 in. and 84-in. driving wheels, the tractive force rating is 30,700 lb. There is no booster.

The boiler is a straight-forward design embodying a conventional stayed firebox and fire-tube shell. The barrel is rolled in two courses

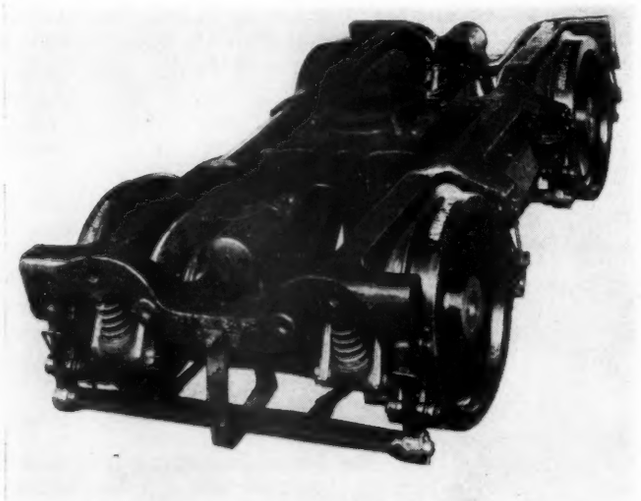


The Fireman's Side of the Cab

and the dome is located on the forward course, 7 ft. back from the front tube sheet.

The firebox sheets are of Lukens firebox steel built up on a solid cast-steel mud ring and stayed with Lewis Special staybolt iron. The stays are 1 in., $1\frac{1}{16}$ in. and $1\frac{1}{8}$ in. in diameter and include a liberal application of flexible stays at the breakage zones. The boiler-shell courses, including the welt strips and the firebox wrapper sheets, are of silicon-manganese steel. The second and larger shell course, which is 80 in. in diameter outside, is rolled from plate $\frac{27}{32}$ in. in thickness, while the front course is $\frac{13}{16}$ in. in thickness.

The firebox is of welded construction throughout. Welding is also used for 12 in. from the ends along the longitudinal shell seams and the edges of the wrapper sheets are welded at all corners 12 in. up from the bottom of the mud ring. Both the firebox and wrapper sheets are also seal-welded to the mud ring behind obstructions which would make access for calking difficult.



The Engine Truck

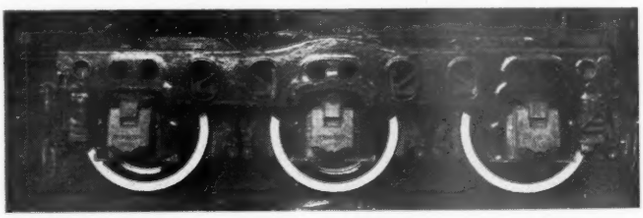
Frames and Running Gear

The locomotive is assembled on a cast-steel bed, of which the cylinders, back cylinder heads, saddle and main reservoir are an integral part. Provision is made for the support of the running boards on the bed casting, either directly or from waist sheet and other bed-casting connections. The shrouding and skirting are, in turn, supported from the running boards. In front of the cylinders the casting includes suitable brackets for the air pump, turbo-generator and bell. There is no bumper beam. The bed terminates at the front in a deep vertical bolting face, to which are attached the front coupler pocket and the pilot or nose structure of the shrouding.

The boiler is supported on sliding shoes at both the front and back ends of the firebox. Between the driving wheels and at the guide yoke are waist sheets which have sliding fits on the boiler shell.

The driving wheels have Boxpok cast-steel centers which are mounted on hollow-bored axles. The journal boxes are fitted with SKF roller bearings. The engine truck is the Commonwealth four-wheel type, with inside journals. The trailing truck is the Commonwealth Delta type with a single axle. SKF bearings are applied on the hollow-bored axles of the engine truck and the trailing truck has an American Steel Foundries roller-bearing axle assembly fitted with Timken roller bearings.

In the design of the rods and motion work weight reduction was an important consideration. The drive is through Tandem main rods, with the cylinders spread



The Six-Wheel Tender Truck

78 in. between centers. The rods are of high-tensile nickel steel and are light I-sections. For stiffness the parallel rod is fish-belly in form. The eccentric rod and crank are also channeled to keep down the weight on the main crank pins. The counterbalancing of the locomotive is such that the dynamic augment at the rail at a speed of 100 m.p.h. is 10,800 lb. The total reciprocating weights on one side of the locomotive amount to 1,003 lb., of which one-third are balanced. The low dynamic augment is due in part to the care in design to keep the weights of reciprocating parts as low as possible and also to the greatly reduced overhang of the pin-borne weights due to the relatively narrow cylinder spread.

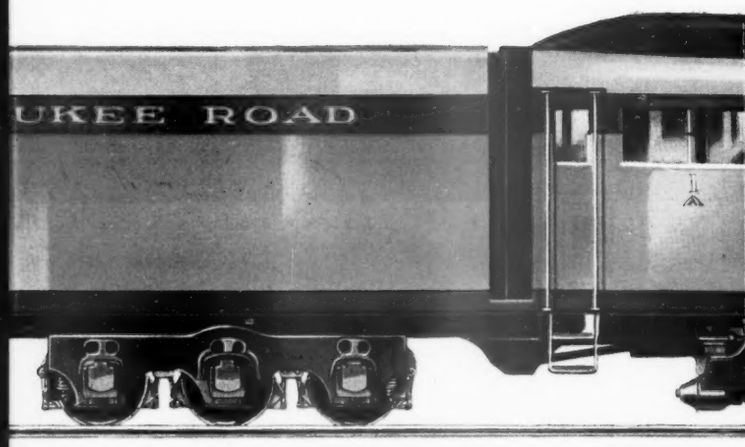
The crank-pin bearings are bronze floating bushings inside of Hunt-Spiller gun iron bushings, pressed in the rods at the rear pins and in the steel articulating bushings of the rods at the front pins. The crank pins are of carbon steel, hollow bored.

The pistons are light Z-sections, open-hearth-steel forgings fitted with Hunt-Spiller Duplex packing. Bronze wearing faces are provided at the bottom. The crossheads and guides are of the Dean three-bar type. The Diamond-Crescent rod packing is suitable for steam temperatures of 750 deg. F.

High-Speed Locomotive for the Milwaukee's "Hia

Built in 1935 by the American Locomotive Compa

Type	4–4–2
Name (of train)	Hiawatha
Height to top of stack	14 ft., 4 in.
Width	10 ft., 2⅜ in.
Cylinders, diameter and stroke	19 in. by 28 in.
Valve gear, type	Walschaert
Valves, piston type:	
Size	10 in.
Maximum travel	6½ in.
Cut-off in full gear, per cent	85
Weights in working order:	
On drivers	140,000 lb.
On front truck	75,000 lb.
On trailing truck	65,000 lb.
Total engine	280,000 lb.
Tender	247,500 lb.
Wheel bases:	
Driving	8 ft., 6 in.
Total engine	37 ft., 7 in.
Total engine and tender	78 ft., 10½ in
Wheels, diameter outside tires:	
Driving	84 in.
Front truck	36 in.
Trailer	51 in.
Boiler:	
Type	Straight top
Steam pressure	300 lb. per sq. in.
Fuel	Oil
Diameter, first ring, outside	78 5/16 in.
Firebox, length and width	132 1/16 in. by 75 3/16 in.
Tubes, number and diameter	160–2¼ in.
Flues, number and diameter	43–5½ in.



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Boiler (cont'd):

Length over tube sheets	19 ft., 0 in.
Grate area	69 sq. ft.

Heating surfaces:

Firebox	254 sq. ft.
Syphons	40 sq. ft.
Tubes	1,781 sq. ft.
Flues	1,170 sq. ft.
Total evaporating	3,245 sq. ft.
Superheating	1,029 sq. ft.
Combined evap. and superheat	4,274 sq. ft.

Tender:

Style	Built-in fuel tank
Fuel capacity	4,000 gal.
Water capacity	13,000 gal.
Rated tractive force	30,700 lb.
Weight on drivers ÷ tractive force	4.56

The locomotive suspension is of the customary three-point type. In addition to the main driving and trailing-truck springs, each side suspension includes two coil cushioning springs, one lever-connected to the front driving-spring hanger and the other interposed directly between the end of the rear trailer-spring hanger and the Delta frame. The driving springs have a slight reverse camber.

The locomotive is fitted with Walschaert valve motion and 10-in. piston valves which have a maximum travel of 6½ in. An American multiple throttle is fitted in the type A superheater header. The latter is connected to the valve chambers by the usual outside steam pipes and Flextite casings. The Alco reverse gear is located at the side of the firebox, behind the skirting below the running board, and is supported directly from the engine bed.

The cylinder and valve chambers are lubricated by a Nathan DV-4 24 pint forced-feed lubricator. The valve motion, rods, spring rigging and brake work are fitted for Alemite lubrication throughout.

The Front End

An unusual feature of the front end is the exclusion of the volume in front of the diaphragm and above the table plate from the smokebox proper. The table plate extends forward to the smoke-box front. In it is an opening to which the bottom of the stack extension is fitted. Since the fuel is oil, no front-end screen is needed. The exhaust nozzle is relatively low in the front end. The Goodfellow tip stands 19⅞ in. from the bottom of the smoke arch and is 12⅛ in. below the bottom of the stack extension and the table plate.

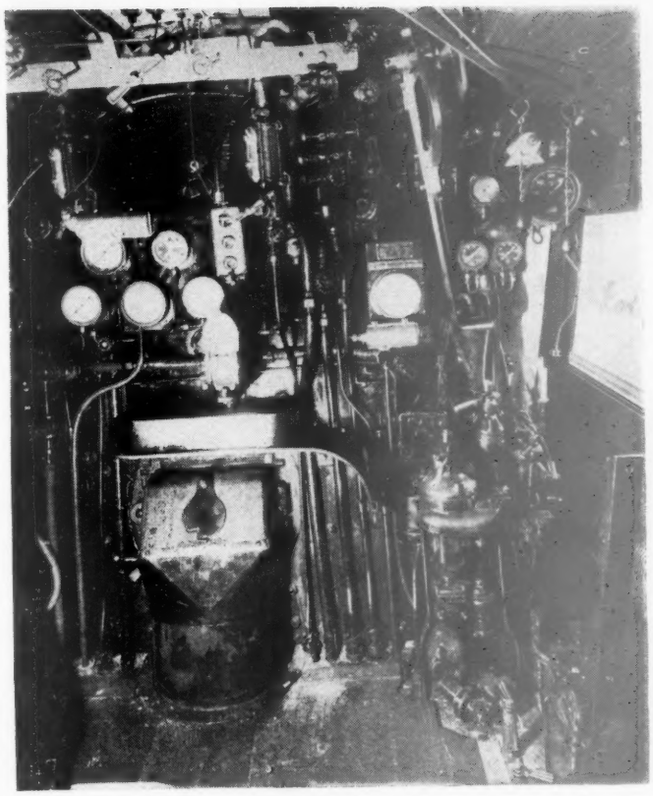
Advantage has been taken of the fact that the smoke stack is concealed to use it as a support for the shrouding. Bolting lugs have been cast on it, both in front and at the rear. A vertical passage of circular section which extends up to the top of the stack also forms an integral part of the casting at the rear. This is provided with a suitable connecting flange at the base and serves as an exhaust pipe for the feedwater pump and the turbo-generator. The moisture from these exhausts is thus kept out of the smokebox. The air-pump exhaust is piped into the main exhaust passage in the cylinder saddle.

The entire front end is lagged and jacketed to keep down the temperature inside the shrouding. The smokebox front is swung on Okadee hinges.

The Brakes

One of the outstanding developments embodied in these locomotives is the foundation brake, designed by the American Brake Company. This is particularly adapted to the dissipation of the large amount of energy stored in the locomotive when moving at speeds of 90 m.p.h. and upward. Clasp brakes are applied on every wheel under the locomotive. On the engine truck there are two brake cylinders, one of which applies the brake shoes against the front and the other against the rear of all wheels. To steady the truck frame against the tilting action of the brake application the ends of the equalizers are extended beyond their bearings on the tops of the journal boxes and support seats for coil cushioning springs under the four corners of the engine-truck frame.

The driver brakes are operated by three cylinders. The front brake shoes on all four driving wheels are applied by a single cylinder through mechanical equalization. The rear shoes on each side of the locomotive have separate cylinders, the equalization between the two sides of the locomotive being effected pneumatically.



Right Side of the Cab

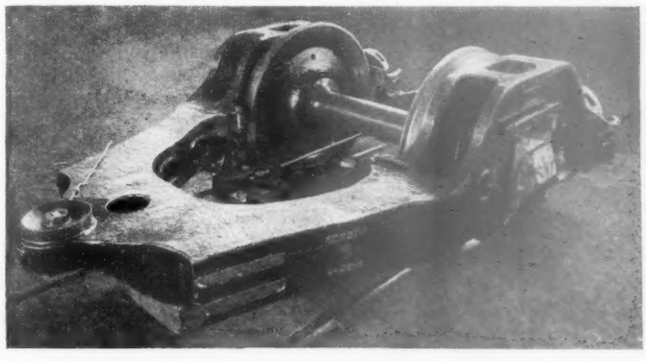
One brake cylinder applies all four shoes on the trailing-truck wheels.

The braking ratios of the three brake systems are, respectively, 45 per cent for the engine truck, 60 per cent for the trailing truck and 78 per cent for the driving wheels, based on 50 lb. brake-cylinder pressure.

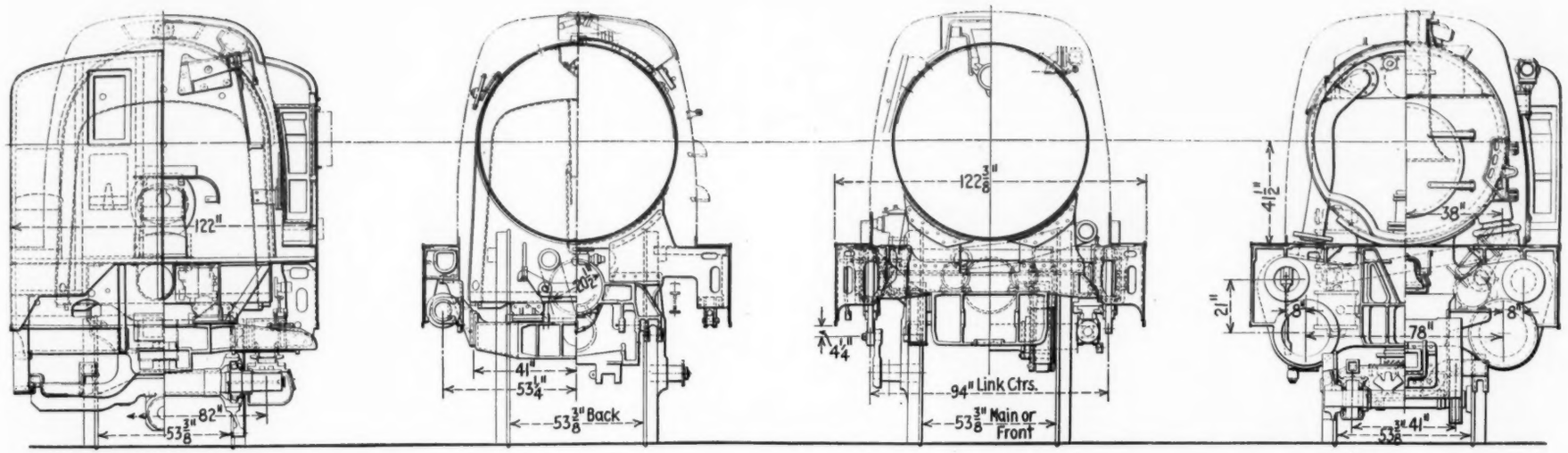
The locomotives are fitted with the Westinghouse No. 8ET air-brake equipment and one 8½-in. cross-compound air compressor. The main reservoir, which is a part of the backbone of the engine bed, is divided into three compartments. Between the air compressor and the first compartment of the reservoir and between the first and second compartments are radiator-pipe connections. The rear compartment, which is small, is connected to the second by a cored passage near the top of the dividing wall and serves as a final moisture settling chamber before the compressed air is drawn into the brake system.

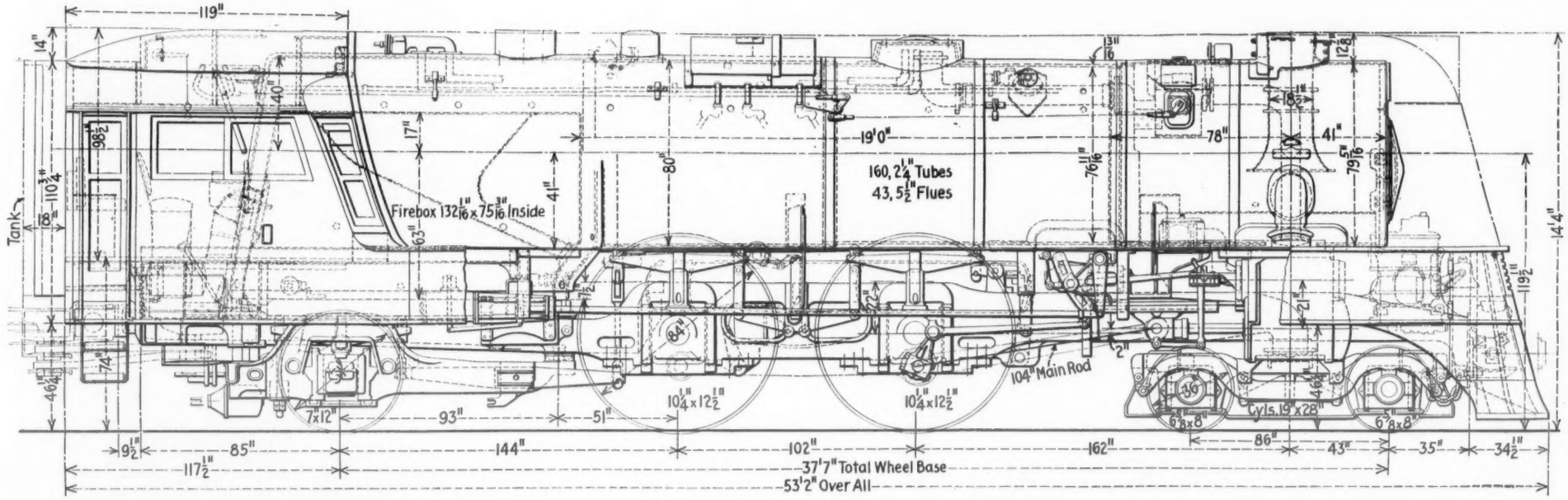
The Shrouding

The shrouding completely encloses the boiler and all apparatus customarily suspended from the boiler or mounted on the locomotive bed. Extending down to



The Trailer-Truck





Elevation and Cross-Sections of the Chicago, Milwaukee, St. Paul & Pacific High-Speed Streamlined Locomotive

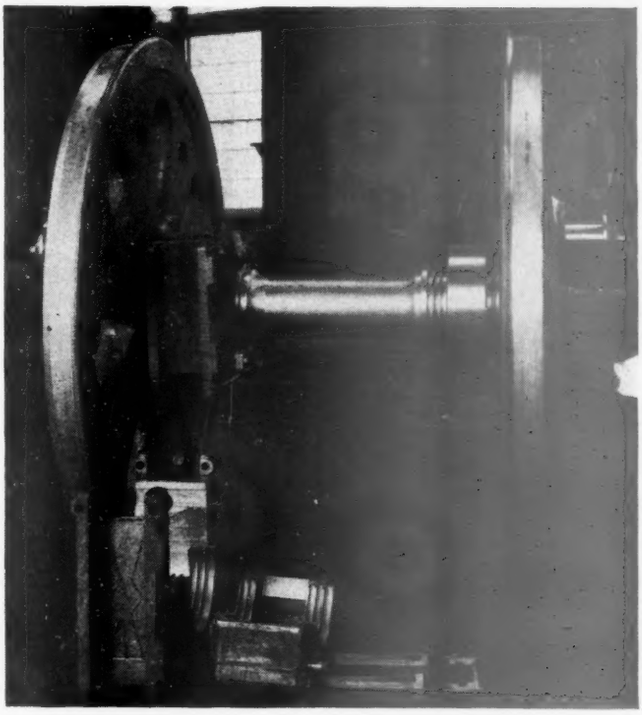
the running board, it is built of No. 16 gage material—Toncan steel for the doors ahead of the smokebox and Republic double-strength steel for the remainder. The sheets are carried on a frame consisting of angle carlines which are supported from the running boards and centered by means of swivel connections to studs on top of the boiler. The shrouding is fitted with doors opposite all washout plugs, sand traps, boiler checks, etc. The entire front is enclosed in swinging doors, the opening of which facilitates access to the front end and the equipment mounted below the front end on the engine bed. Grilles at the top of the front of the shrouding admit air to a duct which has an outlet behind the stack where it serves as a smoke lifter.

Among the interesting details of the shrouding are folding steps in the sides which can be let down when access to the sand box or cab turret is desired. The classification lamps are supported on top of the upper hinges of the front shrouding doors and these hinges have been designed so that the wiring is carried through them to the interior of the jacket. The handrail columns are fitted with simple spring latches, by means of which the handrail is securely locked in the columns. Each is unlocked by push button and opened by spring torsion. Closing the latches automatically locks them in place. An entire side section of the handrail can thus be removed and replaced in a few minutes without the use of tools.

The lower section at the front end of the shrouding serves as a pilot. This is a stiff, welded structure of plates and angles which extends below the bottom of the front-end shrouding doors. A panel on the center of the pilot conceals the coupler when it is not in use. The coupler is hinged in its pocket to swing upward and, when its use is required, on removal of the panel, it can be swung down horizontally. Train-brake and air-signal lines are carried to the front of the locomotive, where they terminate inside the shrouding with standard cut-out cocks. When not in use the air hose are removed and carried in the tool box.

Skirting is supported from the outer edge of the running board and extends down about 33 in. This conceals the reverse gear, the boiler feed pump, the spring rigging and most of the valve motion, and forms an unbroken line from the rear of the pilot wing to the rear of the tender.

Since the locomotive and tender are built for oil-burning service only, there was no need for access to the tender through the arch at the rear of the cab. The

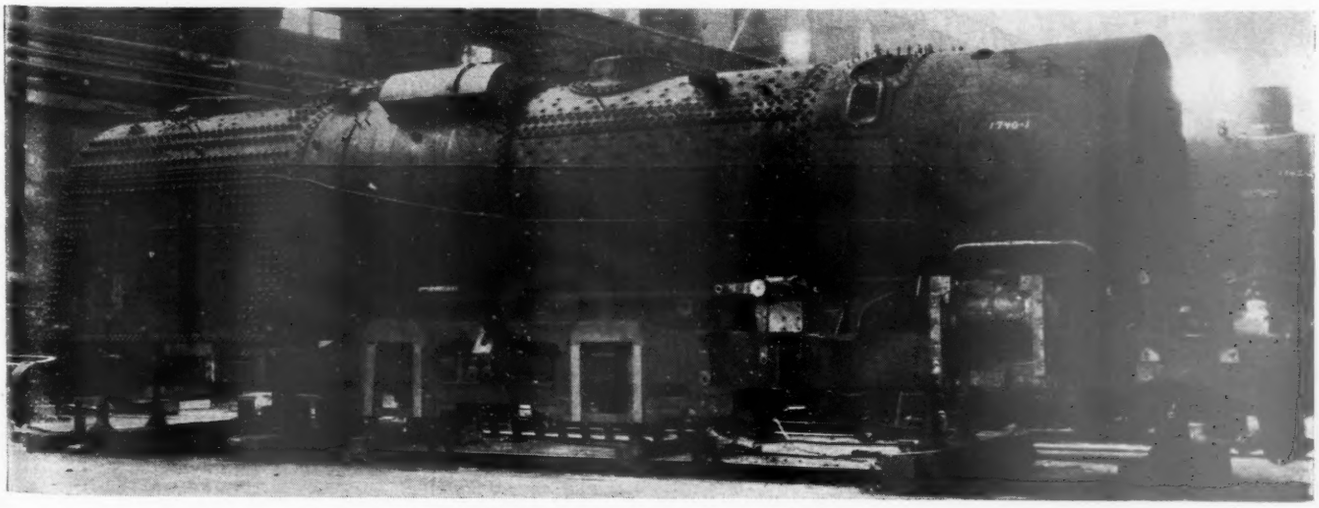


The Driving Wheels and SKF Roller-Bearing Journal Boxes

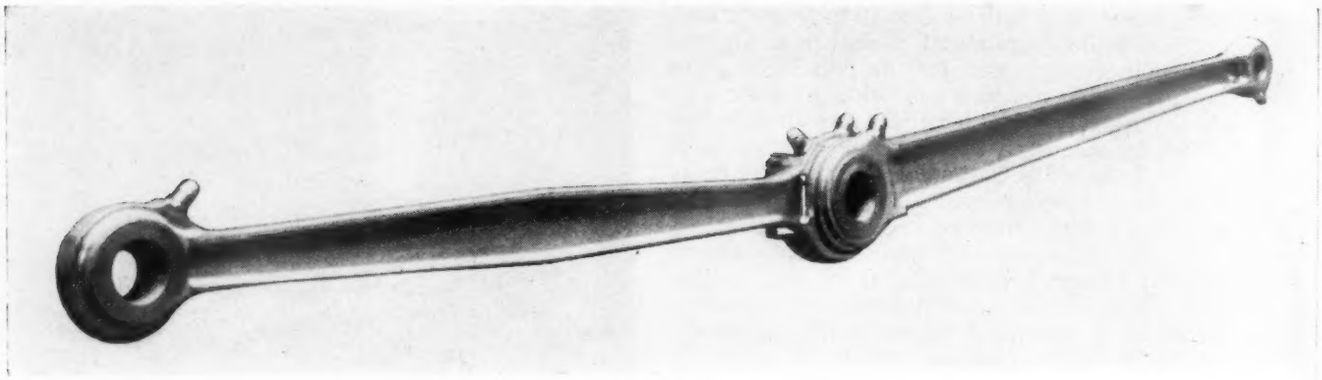
back of the cab has, therefore, been completely enclosed and side doors are provided back of the engineman's and fireman's seats. The cab is of welded construction throughout and is provided with one thickness of hair insulation between the outside sheets and the inside wood lining. The engineman's and fireman's seats are Gustin-Bacon type with Spongex cushions. Two auxiliary drop seats are also provided and are fitted with the same type of cushions. The cabs are fitted with Prime clear-vision windows.

Because of the inaccessibility of the tender while the locomotive is running, the cab is fitted with water- and oil-level indicators, accompanying which is a calibration chart showing the gallons per inch of fuel and water heights. With these gages is also a dial type pyrometer which shows the temperature of the fuel oil in the tank.

There are two steam turrets. That for superheated steam is located on the smokebox near the superheater



The Boiler Mounted on the Engine Bed



The Tandem Rods

header and supplies steam for the air pump, the turbo-generator, the blower line, the oil burner and the cylinder cocks. The saturated-steam turret is placed in the conventional location just ahead of the cab and supplies the injector, steam heat for the train and cab, the power reverse gear, the feedwater pump and the lubricator heater. The locomotive is equipped with a Loco Recorder, reading up to 120 m.p.h., and with Union Coded continuous cab signals.

The headlight is the Pyle-National submerged type with a 14-in. glass reflector, arranged to swing out. The special oval front goggle is mounted in an aluminum frame. The locomotive has a Leslie Tyfon whistle fitted for operation by air or steam. The single horn is enclosed within the cowling immediately above the headlight. Brewster-White remote-control type sanders are applied. The control valves are located at the sand traps with direct air connections from the main reservoir and a pneumatic operating valve in the cab. This arrangement is designed to provide a flow of sand immediately on the operation of the cab valve.

The Tender

The tender is rectangular and is built up by welding upon a General Steel Castings water-bottom frame. It is designed to be used in oil-burning service only, and the fuel tank is built in integrally. The hot-water compartment of the Wilson water conditioner is located on the left side of the water tank at the front and receives exhaust steam from the back end of the exhaust ports through pipes which are carried between the frames and under the draft pan to the tender. The feed pump is located on the left side under the cab.

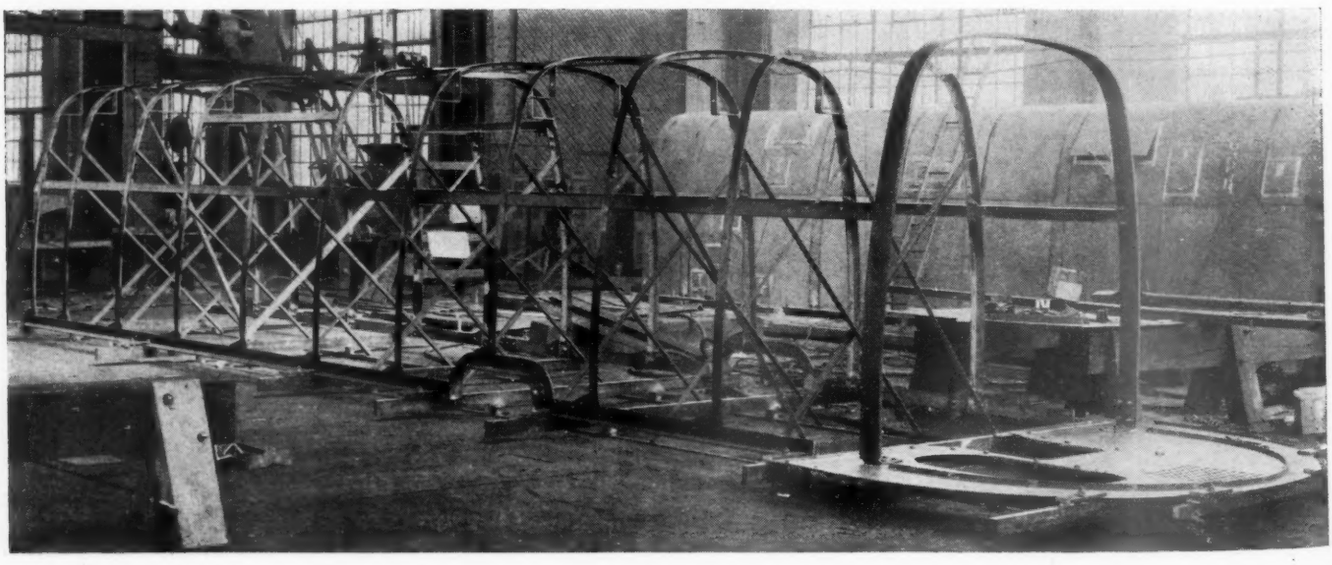
The top of the tank is shrouded to conform with the contour of the roofs of the new passenger cars with which these locomotives will be operated. A single opening in this shrouding provides access to both the water and oil-filling holes. The rear end of the tender is fitted with a dummy vestibule connection.

The tender is carried on five axles. Both the four-wheel and the six-wheel trucks are of General Steel Castings construction fitted with American Steel Foundries roller-bearing wheel-and-axle units having Timken bearings. Davis cast-steel wheels are applied. Both trucks are equipped with Simplex unit type clasp brakes.

The locomotives are fitted with the Franklin Radial buffer and Unit engine and tender drawbar. Miner A-94-XB draft gear is installed at the rear end of the tender. Barco steam, air and oil connections are applied between the engine and tender, with hose connections for water. Barco brake-cylinder connections are also used on the engine, trailer and tender trucks.

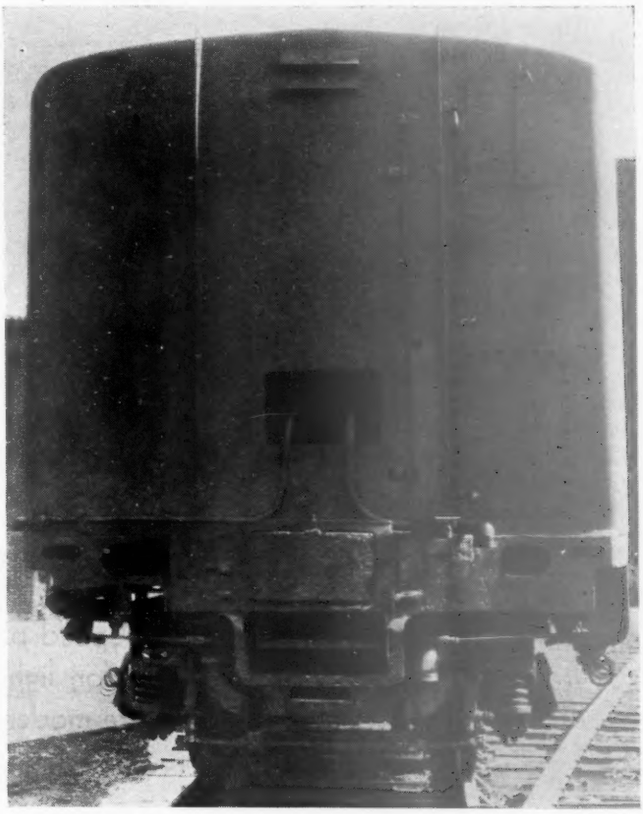
Partial List of Specialties on the Chicago, Milwaukee, St. Paul & Pacific High-Speed Passenger Locomotives

Builder	American Locomotive Co.
Alemite fittings	W. S. Wilson Corp.
Bearings, side—tender truck	Standard Car Truck Co.
Bearing, roller, wheel and axle assembly, with Timken bearings—tender and trailer trucks	American Steel Foundries

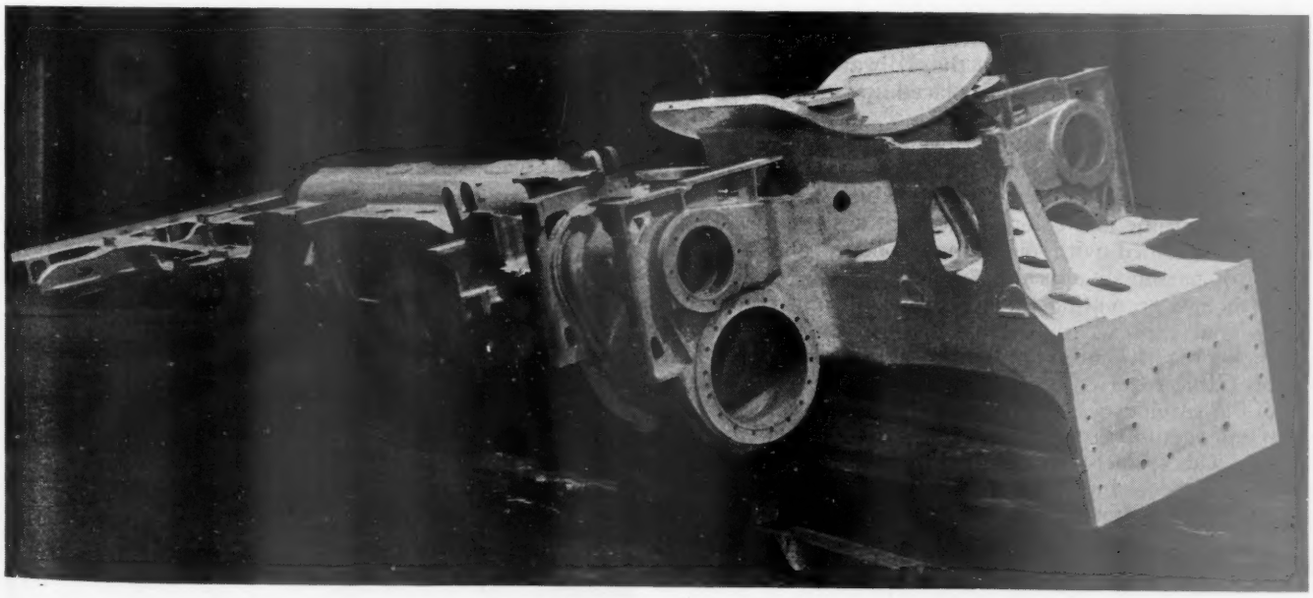


The Shrouding Frame

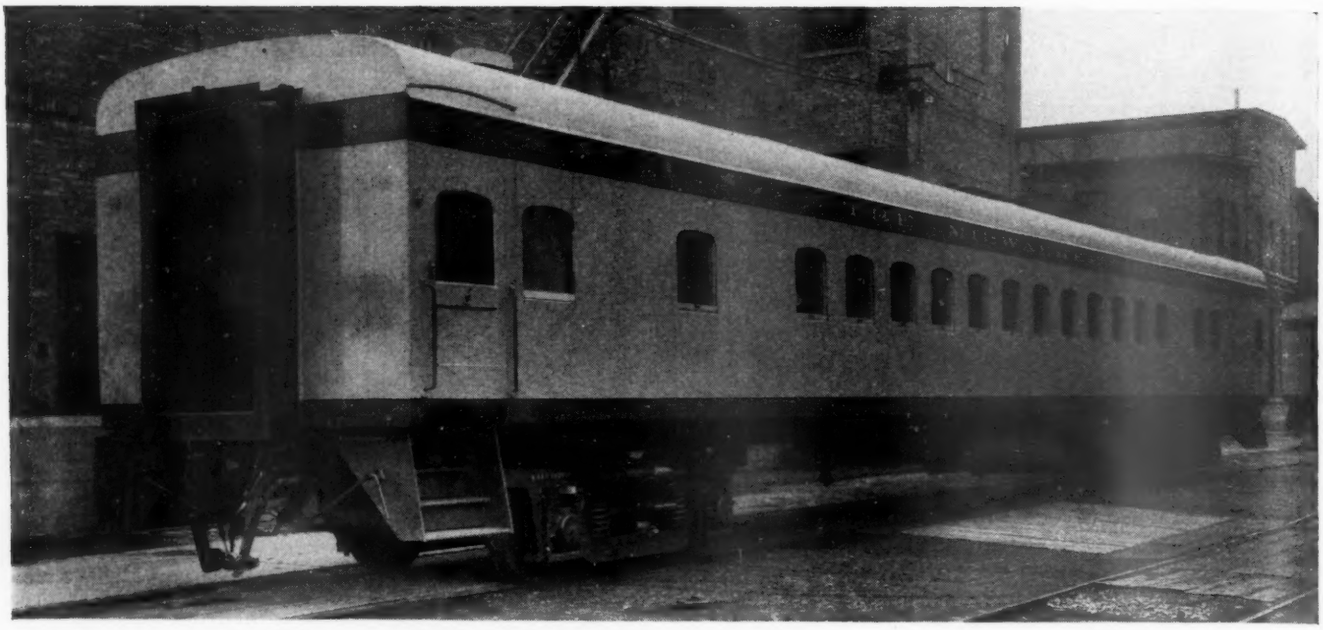
Bearings, roller—main and back driving boxes and engine trucks	SKF Industries, Inc.
Bell ringer	Viloco Railway Equipment Co.
Blow-off cocks	Wilson Engineering Corp.
Boiler tubes and flues	Globe Steel Tubes Co.
Brakes, Simplex unit-type, clasp, tender	American Steel Foundries
Brakes, foundation	American Brake Co.
Brakes, operating	Westinghouse Air Brake Co.
Brake shoes, tender	American Brake Shoe & Foundry Co.
Buffer, radial	Franklin Railway Supply Co.
Bushings, cylinder, valve chamber and side rod	Hunt-Spiller Mfg. Co.
Bushing, main-rod back-end	Camden Forge Co.
Cab insulating material	American Hair & Felt Co.
Cab seats	Gustin-Bacon Manufacturing Co.
Cab signals	Union Switch & Signal Co.
Cab windows, clear vision	Prime Manufacturing Co.
Cable	General Cable Corp.
Castings—engine bed; Boxpok driving-wheel centers; tender frames; engine-, trailing- and tender-truck frames	General Steel Castings Corp.
Couplers	Buckeye Steel Castings Co.
Crosshead shoes	Ampco Metal, Inc.
Crossheads, steel	Adirondacks Steel Foundry Corp.
Cylinder cocks	Prime Manufacturing Co.
Drawbar, Unit safety	Franklin Railway Supply Co.
Draft gears, tender	W. H. Miner, Inc.
Drypipe, Lap welded iron	Reading Iron Co.
Firebrick	American Arch Co.
Flexible joints, steam air and oil between engine and tender, and for brake cylinder connections on engine, tender and trailer trucks	Barco Manufacturing Co.
Gages, steam heat	Ashton Valve Co.
Grease guns (Alemite)	Prime Manufacturing Co.
Headlight and generator, and cab lamps	Pyle-National Co.
Insulated wire	Kerite Insulated Wire & Cable Co.
Joints, Universal	Prime Manufacturing Co.
Lagging, magnesia; steam pipe covering (Insutape)	Union Asbestos & Rubber Co.
Lamps, classification and marker	Adams & Westlake Co.
Low-water alarm	Barco Manufacturing Co.
Lubricators, cylinders and air pumps	Nathan Manufacturing Co.
Oil burner; oil tank heater; oil-burner valves; water-gage drain valves; water-column drain valves; sludge-remover drain valves; safety valves; injector and checks; back-pressure steam gage; dial thermometer; water-level indicator; oil-level indicator	Consolidated Ashcroft Hancock Co.
Packing, piston and piston valve	Hunt-Spiller Mfg. Co.
Packing, piston rod and valve stem (Diamond-Crescent)	T-Z Railway Equipment Co.
Packing, throttle air joint	Pilot Packing Co.
Pistons, forged steel	Carnegie Steel Co.
Rerailers	Aldon Co.
Rod bushings, bronze	Magnus Co.
Running boards, Diamondette steel	Alan Wood Steel Co.
Sanders (B-W)	Morris B. Brewster Co.
Sludge removers	Wilson Engineering Corp.
Smokebox hinges	Okadee Co.
Speed recorder	Valve Pilot Corp.
Springs	American Locomotive Co., Ry. Steel-Spring Div.
Staybolt iron (Lewis Special)	Jos. T. Ryerson & Son
Steel, boiler	Lukens Steel Co.
Steel castings, miscellaneous	American Steel Foundries
Steel plates, for tank and cab	Bethlehem Steel Co.
Steel sheets for shrouding (Double strength, hot rolled)	Republic Steel Corp.
Steel sheets, jacket and cylinder casing	American Sheet & Tin Plate Co.
Superheater (Type A)	Superheater Co.
Syphons	Locomotive Firebox Co.
Throttles, multiple	American Throttle Co.
Truck boxes, tender	Symington Co.
Tubing, copper	Chase Brass & Copper Co.
Valves, couplings, tees—Miscellaneous	Crane Co.
Valves, exhaust, drain and tank	T-Z Railway Equipment Co.
Valves, low-water alarm and globe	Walworth Co.
Valves, steam heat	Vapor Car Heating Co.
Washout plugs	T-Z Railway Equipment Co.
Water conditioner	Wilson Engineering Corp.
Wheels, engine truck	Edgewater Steel Co.
Wheels, tender truck	American Steel Foundries



The Front End of the Tender



The Engine Bed Includes Cylinders, Back Cylinder Heads and Main Reservoir



Hiawatha Cars As Spectacular As the Locomotives

New Milwaukee high-speed passenger train is notable for beauty of line and color; light-weight construction and ultra-modern conveniences

THE Chicago, Milwaukee, St. Paul & Pacific is just completing, at its main shops, Milwaukee, Wis., new car equipment for the Hiawatha, a relatively light-weight, high-speed passenger train which will be exhibited at various cities on the Milwaukee line during the latter part of May and placed in service between Chicago and the Twin Cities, Minn., on or about May 29. With the spectacular Milwaukee-type steam locomotives, described elsewhere in this issue, the new cars comprise two six-car train units, which are strikingly beautiful in line and color. They are designed for high-speed, combined with operating economy and a maximum of passenger appeal.

Although presenting the appearance of unit trains, the individual cars are non-articulated in construction and may be readily cut in or out of the trains, dependent upon traffic requirements. The cars are designed to furnish the spaciousness, comfort and safety of conventional equipment and, in addition to all of the usual modern conveniences, including air-conditioning, they have at least one special feature not heretofore offered to the traveling public, namely, a cocktail-room and bar in one end of one car on each train. With a saving of approximately one-third in car weight, due to all-welded steel construction, the new Milwaukee trains, in point of weight, lie between conventional heavy steam equipment and ultra-light Diesel-electric trains.

Fleetness of foot was a characteristic of Longfellow's legendary Indian chief, Hiawatha, after whom the train was named. It will make the 410 miles between Chicago and St. Paul in 6½ hours' running time, or an average of 63.1 m.p.h., including stops at Milwaukee, Wis., Portage, New Lisbon, La Crosse and Winona,

At the Rear End of the Train

The Interior of One of the Coaches

Minn. Although said to be capable of a speed of 120 m.p.h., the maximum speed in regular service will not exceed 90 m.p.h. The Hiawatha northbound train will leave Chicago at 1:00 p. m., will arrive at Milwaukee at 2:15 p. m., at St. Paul at 7:30 p. m. and at Minneapolis at 8:00 p.m. The southbound train, identical in equipment, will leave Minneapolis at 12:30 p.m., St. Paul at 1:00 p.m., Milwaukee at 6:15 p.m., and arrive at Chicago at 7:30 p. m.

General Makeup of the Train

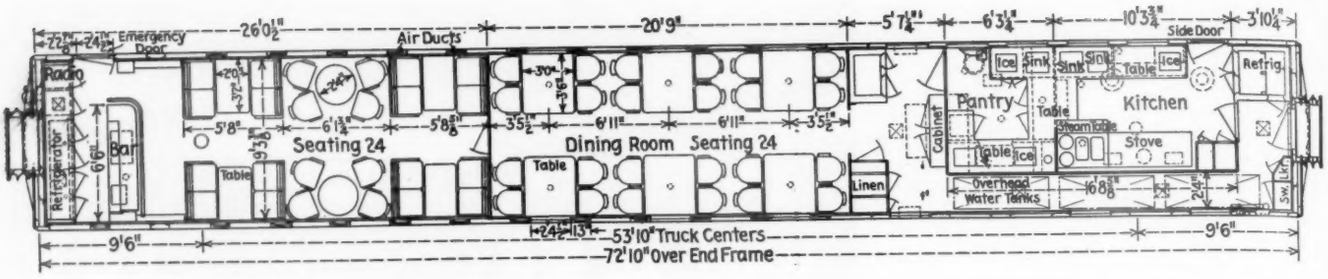
In addition to the streamlined locomotive, each of the new Milwaukee high-speed trains will include a cafe car next to the tender with a fully equipped kitchen in the rear end. The dining compartment in the center seats 24. Adjoining it is the cocktail-room with seats for 24; and located crosswise in the forward (blind) end of the car is a bar. Three coaches have a seating capacity of 48 each in the main compartment, 10 in the men's lounge and 5 in the women's lounge, or a total of 63 per car. The parlor car seats 22 in the main compartment, 10 in the men's lounge and 5 in the women's lounge, or a total of 37. The rear parlor car, or beaver-tail car, as it is called, because of the sloping rear end, has a seating capacity of 24 in the main compartment, 10 in the men's lounge and 5 in the women's lounge, or a total of 39. The aggregate seating capacity in the entire train, exclusive of the dining car, is 265.

In One of the Parlor Cars

Each of the cars is 81 ft. 8 in. long, except the cafe car, which is 75 ft. 8 in. long. The total length of the train, including the locomotive, is 572 ft. 8 in. Referring to one of the tables, it will be observed that the cafe car weighs 122,500 lb., or 31.8 per cent less than an equivalent conventional riveted steel car. The coach weighs 112,200 lb., which represents a weight saving of 31.2 per cent, and the parlor car, 109,000 lb., which represents a weight saving of 35.3 per cent. All four types of cars are practically identical in so far as general body construction is concerned. The parlor car weighs somewhat less than the coach because of having fewer seats. Kitchen equipment in the cafe car adds materially to the weight of this unit. The truck weights are increased approximately 1,000 lb. by the addition of the truck-hung axle generator and drive. The estimated weight of 7,200 lb. for air-cooling equipment on the all-welded cars is less than that charged to the riveted cars because the additional generator weight is already included in the truck figure and the weights of various air ducts, blower units, etc., are included in the car-body weight.

General Structural Features

The 12 cars, which will be used in the two new Milwaukee high-speed trains, are part of an order for 52 cars which the Milwaukee built in its own shops, completing most of them early in 1934. The first two sample cars of this lot were described in an article in the *Railway Age* of May 19, 1934. The other 50 cars, including those which will be used on the Hiawatha, are of the same electric-welded pan-type steel construction, with a number of important exceptions. One-piece platform and bolster castings have been included in the later cars, the seat spacing has been revised, the insulation and type of interior finish changed, double-sash windows applied, and air-conditioning equipment installed throughout by the inser-



Floor Plan of Milwaukee All-Welded Steel Cafe Car

tion of air-cooling units as provided for in the original design.

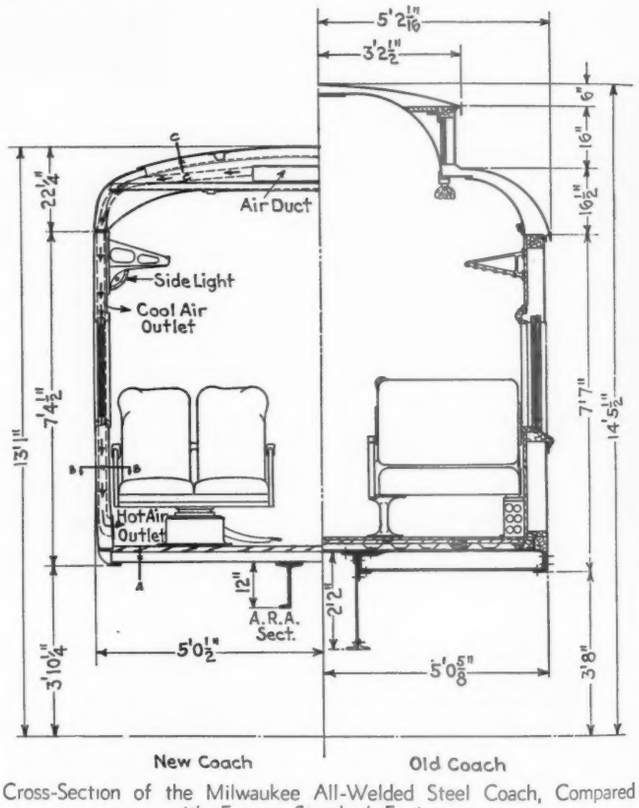
The cars for the Hiawatha are of conventional length and cross section, with the exception that the roof is 1 ft. 4½ in. lower than the former Milwaukee standard. Each car is tubular and streamlined to the extent that it has a turtleback roof with two small ventilators and no other projections; smooth sides with no belt rails, rivets or other projecting parts; windows set practically flush, and the lower edges of the sides rounded slightly inwardly. The end of the rear parlor car is flattened in a smooth curve from the full cross section down to the floor at the end sill. This construction involves the use of a 3-in. by 3-in. T-shape ridge pole, bent to the proper shape, and provided with 2½-in. carlines extending to the side sills. The end sheathing is a ⅛-in. steel plate, formed to the contour shown and having two openings for triangular-shape windows with rounded corners. The side construction at this end of the car is altered to provide a small emergency door on one side of the car which may also be used by trainmen in back-up movements and flagging.

Comparative Weights (in Pounds) of Milwaukee All-Welded High-Speed Passenger-Train Cars and Equivalent Conventional Riveted Steel Cars

	Type of Car			
	Cafe	Coach	Parlor	Rear Parlor
Car body	78,800	72,200	70,000	70,700
Trucks*	36,500	32,800	32,800	32,800
Car weight	115,300	105,000	102,800	103,500
Air-cooling equipment	7,200	7,200	7,200	7,200
Total car weight (Inc. air-conditioning equip.)	122,500	112,200	109,000	110,700
Weight of equivalent riveted steel cars**	179,600	163,000	168,400	—
Per cent weight saved in all-welded cars	31.8	31.2	35.3	—

* Includes weight of truck-hung axle generator and drive.
** Includes estimated total weight of 12,000 lb. for air-conditioning equipment.

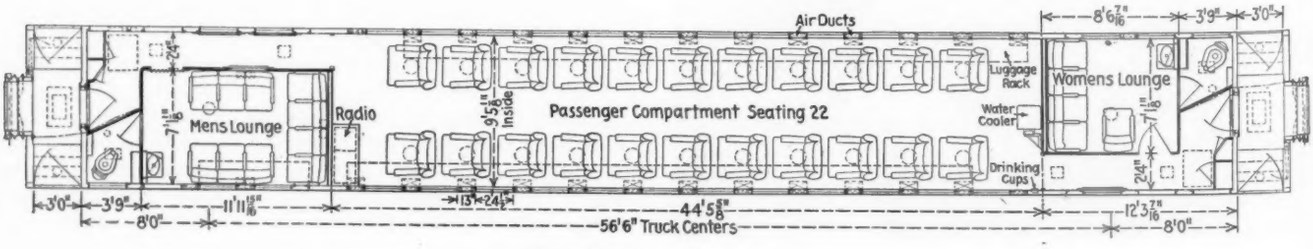
The entire body of the car is fabricated by electric-welding and without the use of rivets. The center sill is an A.A.R. standard 12-in. section riveted and welded to Commonwealth one-piece bolster and platform castings. The floor consists of ⅛-in. floor pans, each of which extends in one piece between the 4-in. Z-section side sills. The floor pans are joined to each other and to the car frame by continuous welds and to the center sills by staggered welds, the latter overlapping. The side-pan pressings, also made of ⅛-in. steel sheets, are flanged inwardly to form the posts. All flanges are spot welded at 3-in. intervals and exposed joints are welded continuously.



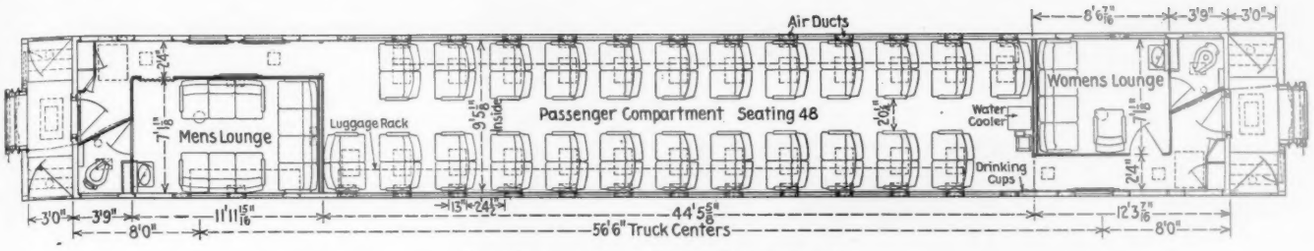
Cross-Section of the Milwaukee All-Welded Steel Coach, Compared with Former Standard Equipment

The turtleback roof is formed of 3/16-in. pressed side plates and 1/16-in. roof sheets, which are flanged on all sides and welded at the flanges. The ridge pole is a ⅛-in. by 3-in. steel strip welded between the center-pan flanges.

In general, therefore, the floor, side and roof construc-



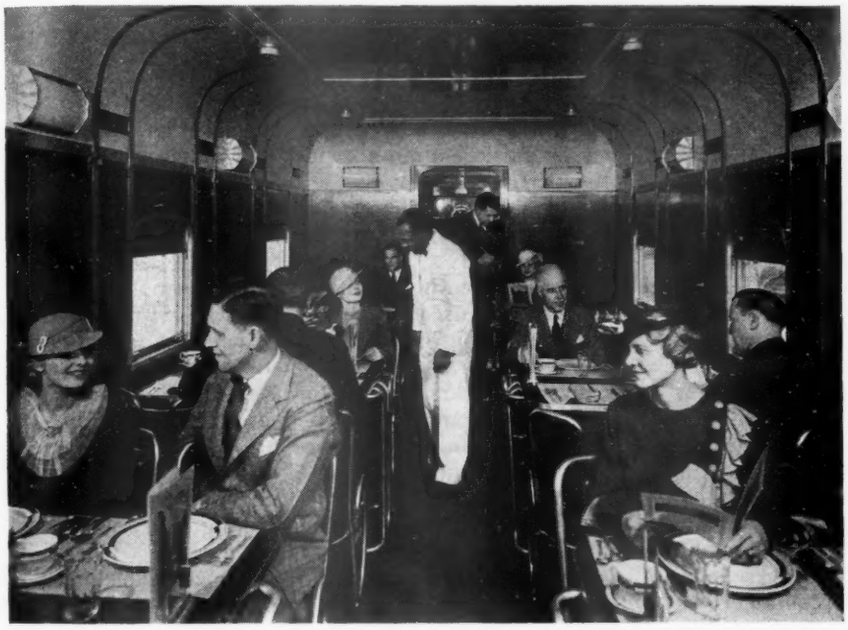
Floor Plan of the Parlor Car



Floor Plan of the All-Welded Steel Coach

tion consists of pressed pans having welded flanges which provide equal stiffness without pressed or structural shapes, such as were used in the first two sample cars. The window and seat spacing in the new cars was decreased from 48 in. to 41½ in., primarily with a view to increasing the seating capacity from 54 to 62. Each car is insulated with J-M special Ozite insulating blanket, 2 in. thick, in the floor, sides and roof, except behind certain air ducts in the side walls where this thickness is reduced to 1 in. The floor of the car consists of 1¼-in. Douglas fir plywood, covered with rubber composition tile. The sidewall pilasters and window headers are cloth-covered fir plywood and the wainscoting ¼-in. fir plywood with Luana wood face. The ceiling consists of ⅝-in. plywood with poplar face, which is painted. The cove under the spacious and continuous parcel rack and the floor of the rack itself is $\frac{3}{16}$-in. fir plywood.

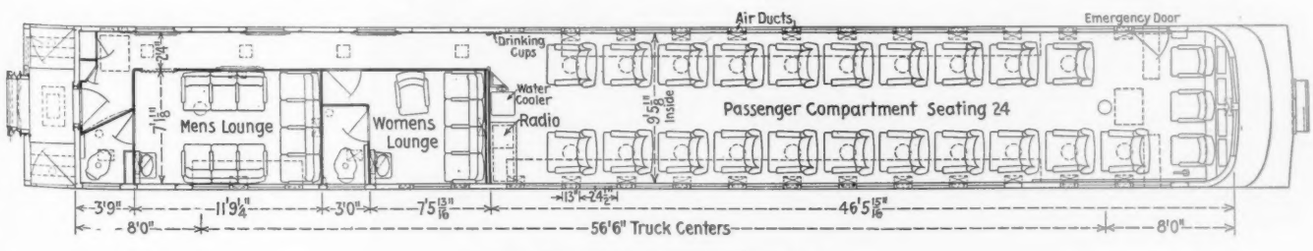
The trucks have Commonwealth cast steel frames, Illinois rolled steel wheels and Simplex unit-cylinder clasp brakes, Timken roller bearings and a Safety 10-kw. truck-mounted generator, with Dayton-Roderwald V-belt drive. This 10-kw. generator, adequate to meet both the lighting and air-conditioning power requirements, replaces a 5-kw. body-hung generator used on the first two sample cars. The additional weight, including the drive, amounts to 1,000 lb. and somewhat unbalances the weights on individual truck springs, all of which are subject to additional loads due to the installation of air-cooling equipment. The new trucks, therefore, carry heavier coil springs at the generator end of the truck and also a heavier main leaf in the elliptic bolster springs, the necessary increased spring capacity being determined by a 12-in. calibrated hydraulic jack inserted for test purposes in each coil-spring seat.



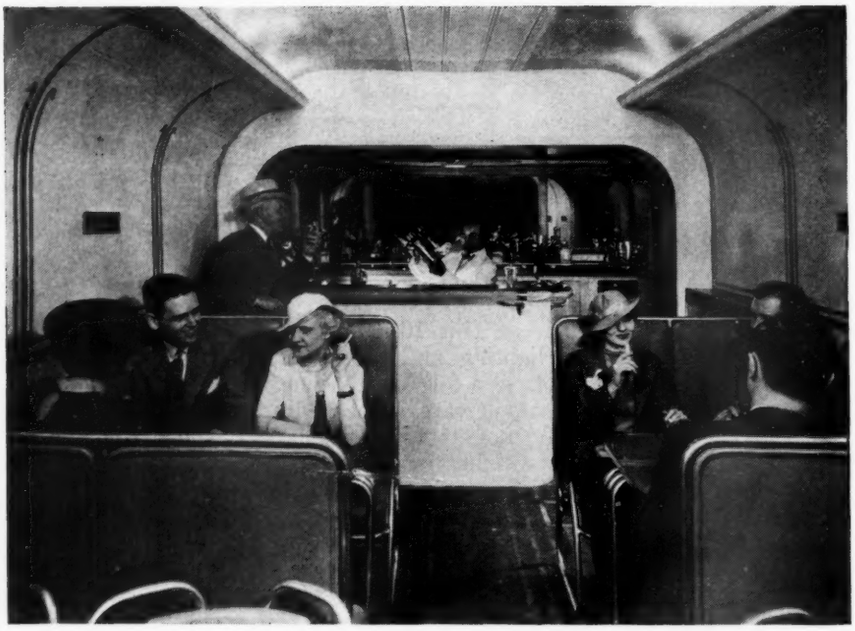
The Dining Room in the Cafe Car

Heating, Lighting, Air-Conditioning

The battery equipment includes both Exide and Gould storage batteries of 850-amp.-hr. capacity, furnishing current to a 32-volt lighting system and to various blowers and water pumps which form a part of the air-conditioning system. The cars are heated and ventilated by means of a system of concealed air ducts, motors and blowers. Provision is made for a cooling unit to



Floor Plan of the "Beaver-Tail" Car



Cocktail Room and Bar in Forward End of the Cafe Car

be cut into the air-circulating system when needed. An American blower unit of 1,000 cu. ft. per min. capacity, is located under the roof in each car end, forcing air through fin-type copper-tube heating or cooling coils, as the case may be, into a central ceiling duct, from which it is distributed into lateral ducts, located behind the pilasters at each seat, and finally into the car through Uniflo grilles. There are two grilles in each pilaster. During the winter season, the top grille is closed by means of a damper, thus forcing the hot air to pass through the lower grille at each seat base near the car floor. For summer cooling, the damper in the upper grille is opened, thus automatically blocking the passage to the lower grille and permitting the cool air to pass into the upper section of the car.

The Young cooling and heating unit, installed in each car end, is provided with an American double-intake blower built into the unit. Air-filter frames are also included in the cooling and heating unit container, so that both fresh and recirculated air pass through the filter before entering the passenger compartments. Fresh air is drawn through a grille located in the ceiling of the vestibule, where a suitable damper arrangement is provided to control the proportion of fresh air admitted. Recirculated air is drawn through a second grille in the ceiling of the hall adjacent to the end door. For emergency or yard heating, a copper coil radiator is provided in the partitions between the main body of the car and each lounge-room. These radiators are of sufficient size to heat the car to a temperature of 50 or 60 deg. in sub-zero weather.

Vapor car-heating facilities and thermostat control equipment are used in all cars. Two switches are installed in the control panel, one of which is used to start the air circulating blowers, which must be in operation whenever the cars are being used. The other switch makes the selection between heating and cooling. In the former, two temperatures are available, either 71 or 74 deg. F., the desired heating thermostat being cut in and taking over the control of car temperature. These thermostats are of the contact-making type, which operate relays controlling the steam valves.

In cooling, three temperatures are available, namely 71, 76 or 80 deg. F., the proper selection being made, dependent upon outside temperatures. Whichever thermostat is cut in, it operates pilot relays which in turn operate various relays controlling the starting or stopping the flow of steam to the condenser steam jet, also the condenser pump and fan, the cold-water pump which furnishes water to the cooling unit in the roof

Trucks are Equipped with Timken Roller Bearings—The 10-Kw. Generator is Mounted Directly on the Truck Frame

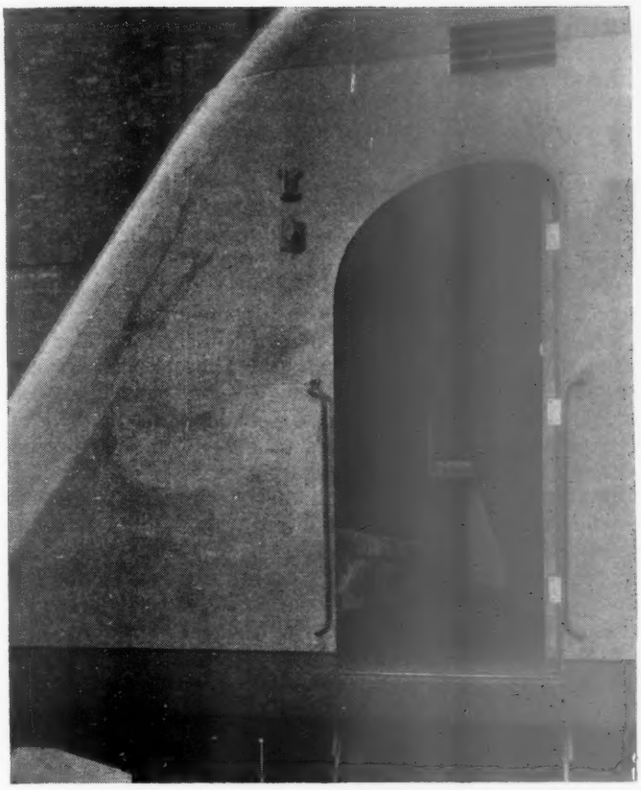
of the car operating continuously while cooling is cut in.

The Safety-Carrier six-ton capacity refrigerating unit, which includes steam-jet equipment, a condenser, water-spray pump and cold-water pump, is applied for the first time on the Milwaukee cars as a single unit in an insulated metal casing, suspended from the car underframe. The refrigerating unit produces the cold water used for cooling the car and derives most of the necessary power from the train line. Steam is taken from the train line and reduced in pressure to 50 lb. through reducing valves, then passing through the steam jet to the condenser.

A condenser-water reserve tank of 110 gal. capacity, located underneath the car, is adequate for approximately 12 hr. operation under average cooling conditions. The reserve tank feeds water automatically to the conditioning unit, equivalent to the amount evaporated from the surface of the condenser. The cold-water makeup is replenished from the condensate. The remainder of the condensed steam goes to the condenser-water supply to replace that evaporated. The reserve tank and other parts of the refrigerating unit are protected against freezing by being well insulated and located adjacent to steam pipes which may be supplied with steam when necessary. The thermostat control is provided with a pilot light which indicates any trouble with the electrical parts of the system.

Partial List of Specialties on Chicago, Milwaukee, St. Paul & Pacific Coaches

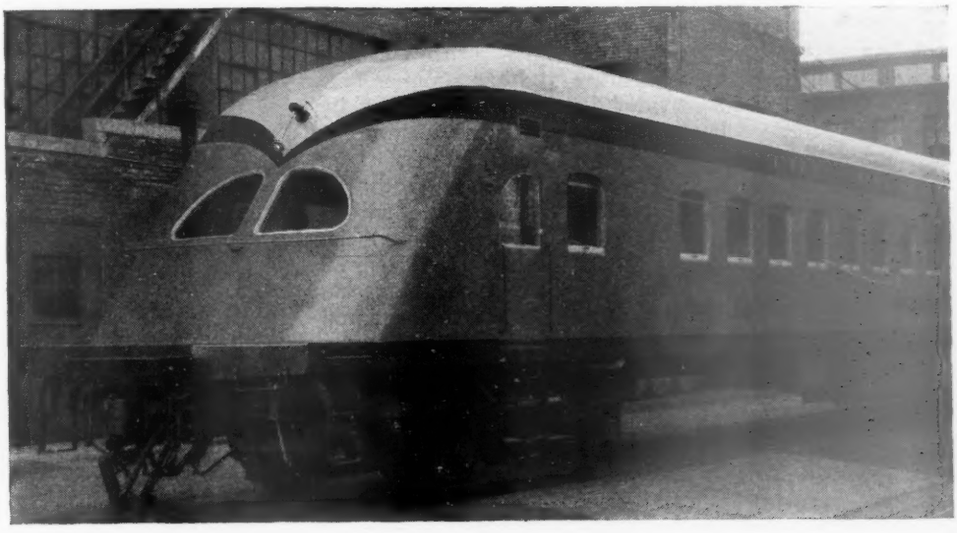
Truck frames, bolsters, platform casting, etc.	General Steel Castings Corp., Eddystone, Pa.
Springs	American Locomotive Co. (Railway Steel Spring Division), New York Union Spring & Mfg. Co., New Kensington, Pa.
Wheels	Illinois Steel Co., Chicago
Vestibule diaphragm	Morton Manufacturing Co., Chicago
Insulation	Johns-Manville Co., New York
Sound-deadening material	Dednox, Inc., Chicago
Couplers	Buckeye Steel Castings Co., Columbus, Ohio
Draft gears, hand brake	W. H. Miner, Inc., Chicago
Air-brake equipment	Westinghouse Air Brake Co., Wilmerding, Pa.
Unit cylinder clasp brake	American Steel Foundries, Chicago
Roller bearings	Timken Roller Bearing Co., Canton, Ohio
Side bearings	A. Stucki Co., Pittsburgh, Pa.
Oilite bearings	Amplex Mfg. Co., Detroit, Mich.
Windows (double sash, aluminum)	Adams & Westlake Co., Elkhart, Ind.
Glass	Pittsburgh Plate Glass Co., Milwaukee, Wis.
Shades	Adams & Westlake Co., Elkhart, Ind.
Seats	Heywood-Wakefield Co., Boston, Mass. Coach & Car Equipment Co., Chicago
Basket racks (aluminum)	Loeffelholz Co., Milwaukee, Wis.
Floor covering	Armstrong Cork & Insulation Co., Lancaster, Pa.
Heating equipment	Vapor Car Heating Co., Chicago
Cooling and heating units	Young Radiator Co., Racine, Wis.
Ventilators (exhaust)	Railway Utility Co., Chicago
Air-cooling system	Safety Car Heating & Lighting Co., New York
Grille cores	Uni-Flow Grille Corp., Detroit, Mich.
Blowers	American Blower Company, Detroit, Mich.
Batteries (Exide Ironclad)	Electric Storage Battery Co., Philadelphia Pa.
Batteries (Kathanodo)	Gould Storage Battery Co., Depew, N. Y.
Electric generators	Safety Car Heating & Lighting Co., New York
D-R axle-generator drives	D. L. Jennings & Co., Chicago
Spotlight	Illuminator Co., Chicago
Light fixtures, door locks, etc.	Loeffelholz Co., Milwaukee, Wis.
Electric water coolers	General Electric Co., Schenectady, N. Y.
Washstands	Crane Co., Chicago
Hoppers	Duner Co., Chicago
Copper pipe and fittings	Mueller Brass Co., Port Huron, Mich. Chase Brass & Copper Co., Waterbury, Conn. American Radiator Co., New York



Emergency Side Door Provided Near the End of One of the Beaver-Tail Cars

Interior Decoration and Equipment

Particular attention has been paid in the interior decorative treatment in the cars to provide a pleasing contrast of colors in finishes, upholstery and floor covering, which will also be durable and not easily soiled. The general color scheme in all cars except the cafe car is



The "Beaver-Tail" Parlor Car at the Rear of the Milwaukee's High-Speed Train "Hiawatha"

light flesh-colored ceiling, brown side walls and green floors, with aluminum trim, double-sash windows and aluminum lighting fixtures. Double-rotating, reclining-back chairs, with individual seat adjustment, and upholstered in an attractive figured fabric, are provided in the coaches. The single chairs in the parlor cars also are unusually comfortable and are equipped with reclining-back seats. The seats in some of the cars were furnished by Hywood-Wakefield and in others by the Coach & Car Equipment Co.

Ceiling lights included in the first two sample cars have been omitted and entire dependence placed on Loeffelholz two-lamp fixtures located in a cove under the basket rack at each seat location. These lights are arranged to be dimmed at night by a series-parallel switch control at the main switchboard. The same type of light is arranged around side walls to give even distribution over seats in the various compartments.

The special interior design and decorative treatment for the coaches was provided by Marshall Field & Company, and for the cafe cars, by F. A. DeMoney, consulting architect, Chicago. The dining compartments are finished with walnut wainscoting and stainless-steel trim. The ceiling, coves and panels are finished in cream. The furniture and chairs are modernistic in design, made of tubular chromium-plated steel, with a dark olive green leather upholstery, and the table tops are finished in dark olive green. The floor covering is dark green linoleum.

The decorative scheme in the cocktail lounge is French gray on the floor, with inlaid orange stripes down through the center passage. The side walls have a black base with a deep orange wainscot trimmed with stainless steel. The walls and coves blend from a deep lemon yellow to cream color in the ceiling. The walls are paneled with stainless-steel strips. Furniture is tubular, chromium-plated steel, with orange colored leather. The table tops and bar tops are finished in French gray with orange stripes. A fully equipped and well stocked 6-ft. 6-in. front bar is provided, with a back bar which extends across the full width of the car.

The dining room has the same type of lighting fixtures around the walls for general illumination as are used in other cars of the train and, in addition, has a 50-watt Spotray lamp in the ceiling over each table to give a high intensity on the table surface. The cocktail lounge, having no windows, is illuminated entirely by indirect light from 30-watt, 32-volt Lumiline lamps located in two troughs spaced 1 ft. 7 in. on either side of the center line in the ceiling. These lamps are continuous to eliminate shadows between lamps. Lumiline lamps are also provided in a trough in the ceiling above the front bar and there are two recessed lights over the back bar, with prismatic lenses arranged to throw a light of high intensity on the glassware and bar supplies.

Radio reception is provided in the cocktail room by means of a Philco chassis in a concealed cabinet in the back bar with a loud speaker overhead. A Philco radio is also installed in each of the parlor cars, with the chassis built into a console table located in the forward end and having a loud speaker concealed behind the ceiling cove at the forward end, with a cloth-covered grille opening into the room. All radio equipment is arranged to be under the control of the car attendant and not adjustable by passengers. The radio operates on a standard 110-volt a.c. system with current supplied by a motor-generator set, taking power from the 32-volt lighting system. The aerial is concealed in wood trunking on the center line of the car roof. General Electric water coolers are provided in the coaches and parlor cars.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended April 27 totaled 558,886 cars, a decrease of 52,019 cars as compared with the week before and of 50,818 cars as compared with the corresponding week of 1934. As compared with 1933 this was an increase of 20,077 cars. This was the first full week after the freight rate increase went into effect and it was believed that the total loading for the week before had been increased somewhat by shipments hurried up to avoid the increase. Live stock, forest products, and ore showed increases as compared with the week before, but grain and grain products and ore were the only commodity classifications to show increases as compared with last year. The summary, as compiled by the Car Service Division of the Association of American Railroads, follows:

Revenue Freight Car Loading

For Week Ended Saturday, April 27

Districts	1935	1934	1933
Eastern	131,596	147,937	120,224
Allegheny	105,250	124,730	98,046
Pocahontas	36,788	43,328	34,371
Southern	83,422	89,232	85,555
Northwestern	72,259	71,607	67,666
Central Western	82,655	84,390	82,931
Southwestern	46,916	48,480	50,016
Total Western Districts	201,830	204,477	200,613
Total All Roads	558,886	609,704	538,809
Commodities			
Grain and Grain Products	26,987	26,514	41,623
Live Stock	13,930	18,470	20,394
Coal	84,111	116,109	78,392
Coke	4,845	6,160	3,642
Forest Products	26,776	25,028	18,958
Ore	11,793	9,414	5,727
Merchandise L.C.L.	159,495	165,436	162,327
Miscellaneous	230,949	242,573	207,746
April 27	558,886	609,704	538,809
April 20	610,905	591,705	496,512
April 13	587,685	579,981	498,182
April 6	545,627	559,070	492,061
March 30	617,485	610,190	498,356
Cumulative Total, 17 Weeks	9,813,784	9,905,628	8,274,859

Car Loading in Canada

Car loadings in Canada for the week ended April 27 totaled 42,194, as against 43,161 for the corresponding week last year and 40,283 for the previous week, according to the compilation of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
April 27, 1935	42,194	22,758
April 20, 1935	40,283	24,038
April 13, 1935	43,556	23,491
April 28, 1934	43,161	25,093
Cumulative Totals for Canada:		
April 27, 1935	725,355	389,846
April 28, 1934	700,107	398,416
April 29, 1933	563,510	292,326

THE FOURTH ANNUAL MEETING of the Norfolk & Western Veterans' Association will be held at Roanoke, Va., on July 13. Approximately 1,400 of the association's 2,200 members are expected to attend. At a meeting of the executive committee on April 27, President A. C. Needles of the N. & W. presented the association's diamond insignia to five 50-year veterans; 90 N. & W. employees have been so honored since the organization of the association.

Railroad Pension Act Held Unconstitutional

Highest court finds it not a regulation of interstate commerce

WASHINGTON, D. C.

HOLDING that a compulsory pension plan imposed by law is "in no proper sense a regulation of interstate transportation," the Supreme Court of the United States on May 6, by a five to four decision, not only declared the Railroad Retirement Act unconstitutional in its entirety but did so in sweeping language which Chief Justice Hughes, dissenting, said raises "a barrier against all legislative action of this nature" and "denies to Congress the power to pass any compulsory pension act for railroad employees."

The majority opinion found the act invalid "because several of its inseparable provisions contravene the due process of law clause of the Fifth Amendment," and "also bad for another reason which goes to the heart of the law, even if it could survive the loss of the unconstitutional features which we have discussed," adding that "the act is not in purpose or effect a regulation of interstate commerce within the meaning of the Constitution."

Completely sustaining the position taken by counsel for the railroads, the court described the act as "an attempt for social ends to impose by sheer fiat non-contractual incidents upon the relation of employer and employee, not as a rule or regulation of commerce and transportation between the states, but as a means of assuring a particular class of employees against old age dependency," which it said was "neither a necessary nor an appropriate rule or regulation affecting the due fulfilment of the railroads' duty to serve the public in interstate transportation."

This opinion, by Justice Roberts, affirmed the judgment of the Supreme Court of the District of Columbia of October 24, 1934, which had declared the act unconstitutional, but went far beyond it, as the lower court, finding fault with the particular statute under consideration, had found the establishment of such a pension system to be within the competence of Congress.

The minority, led by the Chief Justice, whose opinion was concurred in by Justices Brandeis, Stone and Cardozo, took a more liberal view of the powers of Congress under the commerce clause, holding that the majority conclusions is "a departure from sound principles and places an unwarranted limitation upon the commerce clause of the Constitution."

If the Supreme Court had based its decision merely on particular defects of the law, which was pushed through Congress last year by the railroad labor organizations without waiting for the recommendations to be made on the subject by Co-ordinator Eastman, it is understood that he would have been prepared to release at once a new plan designed to meet any objections made by the court, but Chief Justice Hughes said that, in the view of the majority that the subject matter itself lies beyond the reach of the Congressional authority to regulate interstate commerce, "no matter how suitably limited a pension act for railroad employees might be with respect to the persons to be benefited, or how appropriate the measure of retirement allowances, or how sound actuarily the plan, or how well adjusted the burden, still under this decision Congress would not be at liberty to enact such a measure. This is a conclusion of such serious and far-reaching importance that it overshadows all other questions raised by the act. Indeed it makes their discussion superfluous."

If "the fostering of a contented mind on the part of the employee by legislation of this type is in any just sense a regulation of interstate transportation," the court said, "obviously there is no limit to the field of so-called regulation," but "matters related solely to the social welfare of the workers" were described as obviously lying "outside the orbit of Congressional power."

"Assurance of security it truly gives," Justice Roberts says, "but, quite as truly, if 'morale' is intended to connote efficiency, loyalty and continuity of service, the surest way to destroy it in any privately owned business is to substitute legislative largess for private bounty and thus transfer the drive for pension to the halls of Congress and transmute loyalty to employer into gratitude to the legislature."

The Court found that it does not follow that the man of 65 is inefficient or incompetent, saying that the facts indicate a contrary conclusion. It found that the removal of the voluntary character of the pension and its imposition by Congress would eliminate many of the benefits supposed to be inherent in a pension plan. It also referred to the inconsistency of the position that the law was necessary because in times of depression the voluntary systems of the carriers are threatened by loss of revenue, saying "it is difficult to perceive how the vast increase in pension expense entailed by the statute will, without provision of additional revenue, relieve the difficulty experienced by some railroads in meeting the demands of the plans now in force."

Commenting on the feature of the plan by which the railroads are treated as a single unit for pension purposes, Justice Roberts observed that "the carriers have not ceased to be privately operated and privately owned, however much subject to regulation in the interest of interstate commerce," and that "there is no warrant for taking the property or money of one and transferring it to another without compensation."

Announcement of the decision immediately aroused discussion as to whether the court's position in this case would not apply also to the President's social security bill now pending in Congress and plans were made for a new study of that bill in the light of the decision. The railroad pension act was in no sense a part of the President's program, although its subject matter was included within his plans. The discussion also took a range including possible bearing on the litigation now before the court as to the constitutionality of the N. R. A.

Statements by Pelley and Harrison

J. J. Pelley, president of the Association of American Railroads, issued a statement saying:

"Naturally I am gratified at the decision of the Su-

preme Court rendered today in the railroad pension case. The decision relieves the railroads of paying $60,000,000 this year, in addition to what they are paying now voluntarily for pensions. This $60,000,000 would have been increased considerably as the years pass. Most of the railroads pay fairly liberal pensions, in accordance with systems which they have voluntarily established. They expended in 1934, $35,000,000 for this purpose. In the present condition of railroad earnings, a law which would require the payment of $60,000,000 additional this year and increasing amounts in future years would have been very burdensome."

George M. Harrison, chairman of the Railway Labor Executives' Association, sponsor of the ill-fated legislation, characterized the decision as "one of the most reactionary decisions handed down by the court," and said that since the court has held the matter beyond the power of Congress the employees "will therefore of necessity be compelled to rely upon their economic strength to compel the employers to establish a fair and decent system of retirement benefits."

An abstract of the majority opinion follows:

Majority Opinion

The admitted fact that many railroads have voluntarily adopted pension plans does not aid materially in determining the authority of Congress to compel conformance to the one embodied in the Railroad Retirement Act; nor does the establishment of compulsory retirement plans in European countries, to which petitioners refer, for in many of these railroads are operated under government ownership, and none has a constitutional system comparable to ours.

The federal government is one of enumerated powers; those not delegated to the United States by the Constitution, nor prohibited by it to the states, are reserved to the states or to the people. The Constitution is not a statute, but the supreme law of the land to which all statutes must conform, and the powers conferred upon the federal government are to be reasonably and fairly construed, with a view to effectuating their purposes. But recognition of this principle cannot justify attempted exercise of a power clearly beyond the true purpose of the grant. All agree that the pertinent provision of the Constitution is Article I, Section 8, Clause 3, which confers power on the Congress "To regulate commerce . . . among the several states . . ."; and that this power must be exercised in subjection to the guarantee of due process of law found in the Fifth Amendment.

The petitioners assert that the questioned Act, fairly considered, is a proper and necessary regulation of interstate commerce; its various provisions have reasonable relation to the main and controlling purposes of the enactment, the promotion of efficiency, economy and safety; consequently it falls within the power conferred by the commerce clause and does not offend the principle of due process. The respondents insist that numerous features of the Act contravene the due process guaranty and further that the requirement of pensions for employees of railroads is not a regulation of interstate commerce within the meaning of the Constitution. These conflicting views open two fields of inquiry which to some extent overlap. If we assume that under the power to regulate commerce between the states Congress may require the carriers to make some provision for retiring and pensioning their employees, then the contention that various provisions of the Act are arbitrary and unreasonable and bear no proper relation to that end must be considered. If any are found which deprive the railroads of their property without due process, we must determine whether the remainder may nevertheless stand. Broadly the record presents the question whether a statutory requirement that retired employees shall be paid pensions is regulation of commerce between the states within Article I, Section 8.

Provisions as to Former Employees Held Arbitrary

1. We first consider the provisions affecting former employees. The Act makes eligible for pensions all who were in carrier service within one year prior to its passage, irrespective of any future reemployment. About 146,000 persons fall within this class, which, as found below, includes those who have been discharged for cause, who have been retired, who have resigned to take other gainful employment, who have been discharged because their positions were abolished, who were temporarily employed, or who left the service for other reasons. These persons were not in carrier service at the date of the Act, and it is certain thousands of them never again will be. The petitioners say the provision was inserted to assure those on furlough, or temporarily relieved from duty subject to call, the benefit of past years of service, in the event of reemployment, and to prevent the carriers from escaping their just obligations by omitting to recall these persons to service. And it is said that to attempt nicely to adjust the provisions of the Act to furloughed men would involve difficulties of interpretation and inequalities of operation which the blanket provision avoids.

We cannot accept this view. It is arbitrary in the last degree to place upon the carriers the burden of gratuities to thousands who have been unfaithful and for that cause have been separated from the service, or who have elected to pursue some other calling, or who have retired from the business, or have been for other reasons lawfully dismissed. And the claim that such largess will promote efficiency or safety in the future operation of the railroads is without support in reason or common sense.

In addition to the 146,000 who left the service during the year preceding the passage of the Act, over 1,000,000 persons have been but are not now in the employ of the carriers. The statute provides that if any of them is reemployed at any time, for any period, however brief, and in any capacity, his prior service with any carrier shall be reckoned in computing the annuity payable upon his attaining 65 years of age. Such a person may have been out of railroad work for years; his employment may have been terminated for cause; he may have elected to enter some other industry and may have devoted the best years of his life to it; yet if, perchance, some carrier in a distant part of the country should accept him for work of any description, even temporarily, the Act throws the burden of his pension on all the railroads, including, it may be, the very one which for just cause dismissed him.

Plainly, this requirement alters contractual rights; plainly it imposes for the future a burden never contemplated by either party when the earlier relation existed or when it was terminated. The statute would take from the railroads' future earnings amounts to be paid for services fully compensated when rendered in accordance with contract, with no thought on the part of either employer or employee that further sums must be provided by the carrier. The provision is not only retroactive in that it resurrects for new burdens transactions long since past and closed; but as to some of the railroad companies it constitutes a naked appropriation of private property upon the basis of transactions with which the owners of the property were never connected. Thus the Act denies due process of law by taking the property of one and bestowing it upon another. This onerous financial burden cannot be justified upon the plea that it is in the interest of economy, or will promote efficiency or safety. The petitioners say that one who is taken back into service will no doubt render more loyal service since he will know he is to receive a bonus for earlier work. But he will not attribute this benefaction to his employer. The argument comes merely to the contentment and satisfaction theory discussed elsewhere. The petitioners also argue that if the provision in question threatens an unreasonable burden, the carriers have in their own control the means of avoidance, since no carrier need employ any person who has heretofore been in the railroad business. The position is untenable for several reasons. A carrier may wish to employ one having experience, who has been in another's service. Must it forego the opportunity because to choose the servant will impose a financial obligation arising out of an earlier employment with some other railroad? Would that promote efficiency and safety?

"Arbitrary Imposition of Liability"

2. Several features of the Act, touching those now or hereafter in railroad employment, are especially challenged by the respondents.

No specified length of service is required for eligibility to pension, though the amount of the annuity is proportionately reduced if the total term of employment be less than 30 years. One may take a position with a carrier at 20, remain until he

is 30, resign after gaining valuable skill and aptitude for his work, enter a more lucrative profession, and, though never thereafter in carrier employ, at 65 receive a pension calculated on his ten years of service. Or after ten years he may be discharged for peculation, and still be entitled to the gratuity. Or he may be relieved of duty for gross negligence, entailing loss of life or property, and yet collect his pension at 65. May these results be fairly denominated the indicia of reasonable regulation of commerce? May they be cited in favor of this pension system as an aid to economy, efficiency or safety? We cannot so hold. The petitioners' explanation of this feature of the Act is that no "real assurance" of "old-age security" is possible "when pension rights may be lost at any time by loss of employment"; that such a provision is reasonable "because it improves the morale of the employees while they are in the service."

The Act assumes that, in fairness, both employer and employee should contribute in fixed proportions to a liberal pension. But we find that in contradiction of this recognized principle, thousands of those in the service at the date of the Act will at once become entitled to annuities, though they will have contributed nothing to the fund. The burden thus cast on the carriers is found to be for the first year of administration over $9,000,000, and until the termination of payments to these annuitants not less than $78,000,000. All that has been said of the irrelevance of the requirement of payments based upon services heretofore terminated to any consideration of efficiency or safety applies here with equal force. The petitioners say that the retention of these men will be injurious and costly to the service. This view assumes they will be retained for years and are incompetent to do what they are now doing. Evidence is lacking to support either supposition. Next it is said "that they will receive from the fund more than they will have contributed is not significant for all retired employees receive more than they contribute." This attempted but futile justification is significant of the fault in the feature sought to be supported.

One who has served a total of 30 years is entitled to retire on pension at his election, at whatever his then attained age. Thus many who are experienced and reliable may at their own election deprive a carrier of their services, enter another gainful occupation, cease to contribute to the fund, and go upon the pension roll years before the fixed retirement age of 65. The finding is that there are not less than 100,000 in the service of the carriers between 51 and 65 years of age who have had 30 or more years of service. The option is not extended to them to retire on pension in order to improve transportation, for the choice is the employee's to be exercised solely on grounds personal to himself; and the provisions cannot promote economy, for the retiring worker's place will be filled by another who will receive the same wage.

The petitioners say "clearly the provision in question is not arbitrary and unreasonable so as to be unlawful"; but in support of this statement they adduce only the following considerations. As the pension is reduced 1/15th for each year the annuitant lacks of 65 at the date of retirement, his separation, it is said, will impose no greater burden on the fund than if he had waited until 65; the reduction in the amount payable will discourage early retirement, and so tend to counteract the loss of skilled workers; and, finally, "the justification for this provision is that employees who have completed thirty years of service may find it necessary, and it may be in the interest of the industry, for them to retire before age 65." We search in vain for any assertion that the feature under discussion will promote economy, efficiency or safety, and the absence of any such claim is not surprising. The best that can be said, it seems, is that the burden incident to the privilege of early retirement will not be as heavy as others imposed by the statute.

On June 27, 1934, when the Act was approved, there were 1,164,707 people in carrier employ. The Act, by conferring a statutory right to a pension, based in part on past service, gave the work theretofore performed by these persons a new quality. Although completed and compensated in full in conformity with the agreement of the parties, that work, done over a period of 30 years past, is to be the basis for further compulsory payment. While, as petitioners point out, the bounties are payable only in the future, any continuance of the relation, however brief, subsequent to the passage of the Act, matures a right which reaches back to the date of original employment. And to the amount payable in virtue of all these prior years' service, the employees contribute nothing. It is no answer to say that from the effective date of the law they will have to contribute from their wages half as much as do their employers. The future accrues its own annuities. The finding, accepted by the petitioners as veracious, is that the annuities payable for service performed prior to June 27, 1934, would in the year 1935 amount to $68,749,000, and would increase yearly until 1953, in which year the portion of the aggregate pension payments attributable to work antedating the passage of the Act would be $137,435,000. These figures apply only to pensions to those now employed and exclude payments to those who left the service during the year prior to the adoption of the Act, and to those former employees who may hereafter be reemployed.

This clearly arbitrary imposition of liability to pay again for services long since rendered and fully compensated is not permissible legislation. The court below held the provision deprived the railroads of their property without due process, and we agree with that conclusion. Here again the petitioners insist that the requirement is appropriate, because, they say, it does not demand additional pay for past services, but expenditure "for a present and future benefit through improvement of the personnel of the carriers." But the argument ends with mere statement. Moreover, if it were correct in its assumption, which we shall presently show it is not, nevertheless there can be no constitutional justification for arbitrarily imposing millions of dollars of additional liabilities upon the carriers in respect of transactions long closed on a basis of cost with reference to which their rates were made and their fiscal affairs adjusted.

The Act defines as an employee entitled to its benefits an official or representative of an employee organization who during or following employment by a carrier acts for such an organization in behalf of employees. The petitioners say the burden thus imposed is not great; but the provision exhibits the same arbitrary and unreasonable features as those heretofore discussed, and seems irrelevant to any enhancement of safety or efficiency in transportation.

Treatment of the Railroads as a Unit Cannot Be Justified

3. Certain general features of the system violate the Fifth Amendment. Under the statutory plan the draft upon the pension fund will be at a given rate, while the contributions of individual carriers to build up the fund will be at a disparate rate. This results from the underlying theory of the Act, which is that all the railroads shall be treated as a single employer.

The petitioners themselves showed at the trial that the probable age of entry into service of typical carriers differs materially; for one it is 28.4, for another 32.4, for a third 29.3, and for a fourth 34.2. Naturally the age of a pensioner at date of employment will affect the resultant burden upon the contributors to the fund. The statute requires that all employees of age 70 must retire immediately. It is found that 56 of the respondents have no employees in that class. Nevertheless they must contribute toward the pensions of such employees of other respondents nearly $4,000,000 the first year and nearly $33,000,000 in the total. The petitioners admit that these are the facts, but attempt to avoid their force by the assertion that "the cost differentials which are involved are negligible as compared with the total cost." This can only mean that in view of the enormous total cost to all the railroads, the group thus discriminated against should not complain of the disregard of their ownership of their own assets, because in comparison with gross cost the additional payments due to the inequality mentioned are small.

The evidence shows that some respondents are solvent and others not, a situation which often may recur. The petitioners concede that the plan is intended to furnish assurance of payment of pensions to employees of all the carriers, with the result that solvent railroads must furnish the money necessary to meet the demands of the system upon insolvent carriers, since the very purpose of the Act is that the pension fund itself shall be kept solvent and able to answer all the obligations placed upon it.

In recent years many carriers subject to the Interstate Commerce Act have gone out of existence. The petitioners admit that the employees of these defunct carriers are treated upon exactly the same basis as the servants of existing carriers. In other words, past service for a carrier no longer existing is to be added to any service hereafter rendered to an operating carrier, in computing a pension the whole burden of payment

of which falls on those carriers still functioning. And all the future employees of any railroad which discontinues operation must be paid their pensions by the surviving roads. Again the answer of the petitioners is that the amount will be negligible. The fact that millions of dollars are involved in other features of the Act will not serve to obscure this violation of due process.

All the carriers must make good the contributions of all employees, for Section 3 directs that upon the death of an employee the Board shall pay him from the fund what he has contributed to it with 3 per cent. interest compounded annually, less any payments he has received. The railroads are not only liable for their own contributions, but are, in a measure, made insurers of those of the employees. This appears to be an unnecessarily harsh and arbitrary imposition, if the plan is to be what on its face it imports, a joint adventure with mutuality of obligation and benefit.

This court has repeatedly had occasion to say that the railroads, though their property be dedicated to the public use, remain the private property of their owners, and that their assets may not be taken without just compensation. The carriers have not ceased to be privately operated and privately owned, however much subject to regulation in the interest of interstate commerce. There is no warrant for taking the property or money of one and transferring it to another without compensation, whether the object of the transfer be to build up the equipment of the transferee or to pension its employees.

The petitioners insist that since the adoption of the Transportation Act, 1920, and as the logical consequence of decisions of this court, we must recognize that Congress may deal with railroad transportation as a whole and regulate the carriers generally and in classes, with an eye to improvement and development of railway service as a whole; that the interstate carriers use common facilities, make through rates, and interact amongst themselves in various ways, with the result that where any link in the chain lacks efficiency the system as a whole is affected. The argument is that since the railroads and the public have a common interest in the efficient performance of the whole transportation chain, it is proper and necessary to require all carriers to contribute to the cost of a plan designed to serve this end. It is said that the pooling principle is desirable because there are many small carriers whose employees are too few to justify maintenance of a separate retirement plan for each. And finally, the claim is that in fixing carrier contributions, any attempt to give consideration to difference in age, classification, and service periods of employees, would involve grave administrative difficulties and unduly increase the cost of administration. With these considerations in view the petitioners urge that our decisions sanction the exercise of the power involved in the pooling feature of the statute. They rely upon the *New England Divisions Case*, 261 U. S. 184. That case, however, dealt purely with rates; and while the policy of awarding a larger share of the division of a joint rate to the weaker carrier, in consideration of its need for revenue, was approved, the approval was definitely conditioned upon the circumstance that the share or division of the joint rate awarded to the stronger carrier was not so low as to require it to serve for an unreasonable rate. Thus the principle that Congress has no power to confiscate the property of one carrier for the benefit of another was fully recognized.

Dayton-Goose Creek Ry. Co. v. *United States*, 263 U. S. 456, approved the provision of the Transportation Act, 1920, which required the carriers to contribute "one-half of their excess earnings" to a revolving fund to be used by the Interstate Commerce Commission for making loans to carriers to meet capital expenditures and to refund maturing obligations, or to purchase equipment and facilities which might be leased to carriers. The provision was sustained upon the ground that it must be so administered as to leave to each carrier a reasonable return upon its property devoted to transportation, and the holding is clear that if this principle were not observed in administration, the Act would invade Constitutional rights.

Atlantic Coast Line Railroad Co. v. *Riverside Mills*, 219 U. S. 186, which the petitioners cite, is even wider of the mark. There this court upheld the Carmack Amendment, which made the initial carrier liable to the consignor for loss of goods contracted to be delivered over connecting lines. The legislation merely attached certain consequences to a given form of contract. It was recognized that initial carriers in fact enter into contracts for delivery of goods beyond their own lines and make through or joint rates over independent lines. This being so, it was held a proper exercise of the power of regulation to require one so contracting to be liable in the first instance to the shipper. So to regulate a recognized form of contract is not offensive to the Fifth Amendment.

We conclude that the provisions of the Act which disregard the private and separate ownership of the several respondents, treat them all as a single employer, and pool all their assets, regardless of their individual obligations and the varying conditions found in their respective enterprises, cannot be justified as consistent with due process.

The Act is said to be unconstitutional because unreasonably and unconscionably burdensome and oppressive upon the respondents, and we are referred to a finding of the court below to which petitioners do not assign error. The facts as found are: based upon present payrolls, the carriers' contributions for the first year will aggregate not less than $60,000,000; at the rates fixed in the Act, total employee and carrier contributions will, on the basis of present payrolls, be approximately $90,000,000 per year; unless the amount of the contributions is increased by the Board, the drain on the fund for payment of pensions will result in a deficit of over $11,000,000 by the year 1942. To keep the fund in operation it will be necessary for the Board to increase the percentages of contributions named in the Act. The petitioners' actuary testified that in the tenth year of operation the payments from the fund will be upwards of $137,000,000. The railroads' total contribution to pensions on account of prior service of employees in service at the date of the Act may amount to $2,943,966,000. We are not prepared to hold that if the law were in other respects within the legislative competence, the enormous cost involved in its administration would invalidate it; but the recited facts at least emphasize the burdensome and perhaps destructive effect of the contraventions of the due process of law clause which we find exist. Moreover they exhibit the inconsistency of the petitioners' position that the law is necessary because in times of depression the voluntary systems of the carriers are threatened by loss of revenue. It is difficult to perceive how the vast increase in pension expense entailed by the statute will, without provision of additional revenue, relieve the difficulty experienced by some railroads in meeting the demands of the plans now in force.

4. What has been said sufficiently indicates our agreement with the holding of the trial court respecting the disregard of due process exhibited by a number of the provisions of the Act. We also concur in that court's views concerning the inseverability of certain of them. The statute contains a section broadly declaring the intent that invalid provisions shall not operate to destroy the law as a whole. Such a declaration provides a rule which may aid in determining the legislative intent, but is not an inexorable command. It has the effect of reversing the presumption which would otherwise be indulged, of an intent that unless the act operates as an entirety it shall be wholly ineffective. But notwithstanding the presumption in favor of divisibility which arises from the legislative declaration, we cannot rewrite a statute and give it an effect altogether different from that sought by the measure viewed as a whole. In this view we are confirmed by the petitioners' argument that as to some of the features we hold unenforcible, it is "unthinkable" and "impossible" that the Congress would have created the compulsory pension system without them. They so affect the dominant aim of the whole statute as to carry it down with them.

Act Not a Regulation of Interstate Commerce

5. It results from what has now been said that the Act is invalid because several of its inseparable provisions contravene the due process of law clause of the Fifth Amendment. We are of opinion that it is also bad for another reason which goes to the heart of the law, even if it could survive the loss of the unconstitutional features which we have discussed. The Act is not in purpose or effect a regulation of interstate commerce within the meaning of the Constitution.

Several purposes are expressed in Section 2 (a), amongst them: to provide "adequately for the satisfactory retirement of aged employees"; "to make possible greater employment opportunity and more rapid advancement"; "to provide by the administration and construction of the Act the greatest practicable amount of relief from unemployment and the greatest possible

use of resources available for said purpose and for the payment of annuities for the relief of superannuated employees." The respondents assert and the petitioners admit that though these may in and of themselves be laudable objects, they have no reasonable relation to the business of interstate transportation. The clause, however, states a further purpose, the promotion of "efficiency and safety in interstate transportation," and the respondents concede that an act, the provisions of which show that it actually is directed to the attainment of such a purpose, falls within the regulatory power conferred upon the Congress; but they contend that here the provisions of the statute emphasize the necessary conclusion that the plan is conceived solely for the promotion of the stated purposes other than efficient and safe operation of the railroads. The petitioners' view is that this is the true and only purpose of the enactment, and the other objects stated are collateral to it and may be disregarded if the law is found apt for the promotion of this legitimate purpose.

From what has already been said with respect to sundry features of the statutory scheme, it must be evident that petitioners' view is that safety and efficiency are promoted by two claimed results of the plan: the abolition of excessive superannuation, and the improvement of morale.

The parties are at odds respecting the existing superannuation of railway employees. Petitioners say it is much greater than that found in the heavy industries. Respondents assert it is less, and the court below so found. The finding is challenged as being contrary to the evidence. We may, for present purposes, assume that "superannuation" as petitioners use the term, i. e., the attainment of 65 years, is as great or greater in the railroad industry than in comparable employments. It does not follow, as contended, that the man of that age is inefficient or incompetent. The facts indicate a contrary conclusion. Petitioners say the seniority rules and the laying off of younger men first in reducing forces necessarily tend to keep an undue proportion of older men in the service. They say this tendency has long been marked in the railroad industry and has been most noticeable in recent years of depression when forces have been greatly reduced. But what are the uncontradicted facts as to efficiency and safety of operation? Incontrovertible statistics obtained from the records of the Interstate Commerce Commission show a steady increase in safety of operation during this period of alleged increasing superannuation. Indeed, one of the petitioners, and one of their most important witnesses, has written, referring to railroads:

"Experience seems to have proved, moreover, that older workers cause fewer accidents than do younger; hence there is little necessity for removing them on that ground."

There is overwhelming evidence in the record to the same effect. All that petitioners offer on the subject in their brief is: "in an industry having as many hazardous occupations as the railway industry, improvement in personnel conditions is likely to mean increased safety." We think it not unfair to say that the claim for promotion of safety is virtually abandoned.

No Relation to Efficiency, Economy, or Safety

How stands the case for efficiency? Here again the record without contradiction demonstrates that in step with the alleged progressive superannuation on the railroads their operations have increased in efficiency. The trial court found, and its finding is not assigned as error: "Railroads were, when the Act was enacted, and are now, operated efficiently and safely and more efficiently and much more safely than at any time in history."

Lastly the petitioners suggest that diminution of superannuation promotes economy, because younger and lower paid men will replace the retired older men. But the argument is based upon inadvertent disregard of the wage structure of the carriers, especially in the train and engine service, whereby contract compensation is based not on age but upon the nature of the duties performed. The replacement of one by another who is to do the same work will therefore beget no saving in wages.

When to these considerations is added that, as heretofore said, the Act disregards fitness to work, pensions the worker who retires at his option before any suggested superannuation, irrespective of skill or ability, pensions those who are presently compelled by the law to retire, irrespective of their fitness to labor, and grants annuities to those who are discharged for dishonesty or gross carelessness, it becomes perfectly clear that, though the plan may bring about the social benefits mentioned in Section 2a, it has and can have no relation to the promotion of efficiency, economy or safety by separating the unfit from the industry. If these ends demand the elimination of aged employees, their retirement from the service would suffice to accomplish the object. For these purposes the prescription of a pension for those dropped from service is wholly irrelevant. The petitioners, conscious of the truth of this statement, endeavor to avoid its force by the argument that social and humanitarian considerations demand the support of the retired employee. They assert that it would be unthinkable to retire a man without pension and add that attempted separation of retirement and pensions is unreal in any practical sense, since it would be impossible to require carriers to cast old workers aside without means of support. The supposed impossibility arises from a failure to distinguish Constitutional power from social desirability. The relation of retirement to safety and efficiency is distinct from the relation of a pension to the same ends, and the two relationships are not to be confused.

In final analysis, the petitioners' sole reliance is the thesis that efficiency depends upon morale, and morale in turn upon assurance of security for the worker's old age. Thus pensions are sought to be related to efficiency of transportation, and brought within the commerce power. The theory is that one who has an assurance against future dependency will do his work more cheerfully, and therefore more efficiently. The question at once presents itself whether the fostering of a contented mind on the part of an employee by legislation of this type, is in any just sense a regulation of interstate transportation. If that question be answered in the affirmative, obviously there is no limit to the field of so called regulation. The catalog of means and actions which might be imposed upon an employer in any business, tending to the satisfaction and comfort of his employees, seems endless. Provision for free medical attendance and nursing, for clothing, for food, for housing, for the education of children, and a hundred other matters, might with equal propriety be proposed as tending to relieve the employee of mental strain and worry. Can it fairly be said that the power of Congress to regulate interstate commerce extends to the prescription of any or all of these things Is it not apparent that they are really and essentially related solely to the social welfare of the worker, and therefore remote from any regulation of commerce as such? We think the answer is plain. These matters obviously lie outside the orbit of Congressional power.

No support for a plan which pensions those who have retired from the service of the railroads can be drawn from the decisions of this court sustaining measures touching the relations of employer and employee in the carrier field in the interest of a more efficient system of transportation. The Safety Appliance Acts, the Employers' Liability Acts, hours-of-service laws, and others of analogous character, cited in support of this Act, have a direct and intimate connection with the actual operation of the railroads. No less inapposite are the statutes which deal with exchange of facilities, joint facilities, joint rates, etc., for these have an obvious and direct bearing on the obligations of public service incident to the calling of the railroads. The railway labor act was upheld by this court upon the express ground that to facilitate the amicable settlement of disputes which threatened the service of the necessary agencies of interstate transportation tended to prevent interruptions of service and was therefore within the delegated power of regulation. It was pointed out that the act did not interfere with the normal right of the carrier to select its employees or discharge them. The legislation considered in *Wilson* v. *New*, 243 U. S. 332, was drafted to meet a particular exigency and its validity depended upon circumstances so unusual that this court's decision respecting it cannot be considered a precedent here.

Stress is laid upon the supposed analogy between workmen's compensation laws and the challenged statute. It is said that while Congress has not adopted a compulsory and exclusive system of workmen's compensation applicable to interstate carriers, no one doubts the power so to do; and the Retirement Act cannot in principle be distinguished. The contention overlooks fundamental differences. Every carrier owes to its employees certain duties the disregard of which render it liable at common law in an action sounding in tort. Each state has developed or adopted, as part of its jurisprudence, rules as to the employer's liability in particular circumstances. These are not the same in all the states. In the absence of a rule

applicable to all engaged in interstate transportation the right of recovery for injury or death of an employee may vary depending upon the applicable state law. That Congress may, under the commerce power, prescribe an uniform rule of liability and a remedy uniformly available to all those so engaged, is not open to doubt. The considerations upon which we have sustained compulsory workmen's compensation laws passed by the states in the sphere where their jurisdiction is exclusive apply with equal force in any sphere wherein Congress has been granted paramount authority.

Modern industry, and this is particularly true of railroads, involves instrumentalities, tasks and dangers unknown when the doctrines of the common law as to negligence were developing. In dealing with the situation it is permissible to substitute a new remedy for the common law right of action; to deprive the employer of common law defenses and substitute a fixed and reasonable compensation commuted to the degree of injury; to replace uncertainty and protracted litigation with certainty and celerity of payment; to eliminate waste; and to make the rule of compensation uniform throughout the field of interstate transportation, in contrast with inconsistent local systems. By the very certainty that compensation must be paid for every injury such legislation promotes and encourages precaution on the part of the employer against accident and tends to make transportation safer and more efficient. The act with which we are concerned seeks to attach to the relation of employer and employee a new incident, without reference to any existing obligation or legal liability, solely in the interest of the employee, with no regard to the conduct of the business, or its safety or efficiency, but purely for social ends.

The petitioners, in support of their argument as to morale, rely upon the voluntary systems adopted in past years by almost all the carriers, and now in operation. The argument runs that these voluntary plans were adopted in the industry for two principal reasons—the creation of loyalty and the encouragement of continuity in service.

They assert that the Railroad Retirement Act, "although it embodies the first compulsory retirement and pension plan enacted in this country, is but the development of voluntary plans which have been in use in this country, particularly among the railroads, for more than a third of a century." The argument is self-contradictory. If, as is conceded, the purpose of the voluntary establishment of pensions is to create loyalty to the employer who establishes them, and continuity in his service, it seems axiomatic that the removal of the voluntary character of the pension and the imposition of it in such form as Congress may determine, upon all employers, and irrespective of length of service, or of service for the same employer, will eliminate all sense of loyalty or gratitude to the employer, and remove every incentive to continuance in the service of a single carrier.

The petitioners, in effect, say: the carriers with certain objects and purposes have adopted voluntary systems; this proves that pensions are germane to the railroad business; Congress may legislate on any subject germane to interstate transportation; therefore Congress may for any reason or with any motive impose any type of pension plan. The contention comes very near to this,—that whatever some carriers choose to do voluntarily in the management of their business, at once invests Congress with the power to compel all carriers to do. The fallacy is obvious. The meaning of the commerce and due process clauses of the Constitution is not so easily enlarged by the voluntary acts of individuals or corporations.

Certainly the argument is inconsistent with any thought that a plan imposed by statute, requiring the payment of a pension, will promote the same loyalty and continuity of service which were the ends and objects of the voluntary plans. We think it cannot be denied, and, indeed, is in effect admitted, that the sole reliance of the petitioners is upon the theory that contentment and assurance of security are the major purposes of the Act. We cannot agree that these ends if dictated by statute, and not voluntarily extended by the employer, encourage loyalty and continuity of service. We feel bound to hold that a pension plan thus imposed is in no proper sense a regulation of the activity of interstate transportation. It is an attempt for social ends to impose by sheer fiat non-contractual incidents upon the relation of employer and employee, not as a rule or regulation of commerce and transportation between the States, but as a means of assuring a particular class of employees against old age dependency. This is neither a necessary nor an appropriate rule or regulation affecting the due fulfilment of the railroads' duty to serve the public in interstate transportation.

The judgment of the Supreme Court of the District of Columbia is *Affirmed*.

The Minority Opinion

Chief Justice Hughes, in his dissenting opinion, said in part:

I am unable to concur in the decision of this case. The gravest aspect of the decision is that it does not rest simply upon a condemnation of particular features of the Railroad Retirement Act, but denies to Congress the power to pass any compulsory pension act for railroad employees. If the opinion were limited to the particular provisions of the Act, which the majority find to be objectionable and not severable, the Congress would be free to overcome the objections by a new statute. Classes of persons held to be improperly brought within the range of the Act could be eliminated. Criticisms of the basis of payments, of the conditions prescribed for the receipt of benefits, and of the requirements of contributions, could be met. Even in place of a unitary retirement system another sort of plan could be worked out. What was thus found to be inconsistent with the requirements of due process could be excised and other provisions substituted. But after discussing these matters, the majority finally raise a barrier against all legislative action of this nature by declaring that the subject matter itself lies beyond the reach of the congressional authority to regulate interstate commerce. I think that the conclusion thus reached is a departure from sound principles and places an unwarranted limitation upon the commerce clause of the Constitution.

In defining the power vested in Congress to regulate interstate commerce, we invariably refer to the classic statement of Chief Justice Marshall. It is the power "to prescribe the rule by which commerce is to be governed." The power "is complete in itself, may be exercised to its utmost extent, and acknowledges no limitations, other than are prescribed in the Constitution." It is a power to enact "all appropriate legislation for the protection and advancement" of interstate commerce. "To regulate," we said in the *Second Employers Liability Cases*, 223 U. S. 1, 47, "in the sense intended, is to foster, protect, control and restrain, with appropriate regard for the welfare of those who are immediately concerned and of the public at large." And the exercise of the power, thus broadly defined, has had the widest range in dealing with railroads, which are engaged as common carriers in interstate transportation. As their service is vital to the nation, nothing which has a real or substantial relation to the suitable maintenance of that service, or to the discharge of the responsibilities which inhere in it, can be regarded as beyond the power of regulation.

It was inevitable that, with the development of the transportation system of the country, requiring a vast number of employees, there should have been a growing appreciation of the importance of conditions of employment. It could not be denied that the sovereign power to govern interstate carriers extends to the regulation of their relations with their employees who likewise are engaged in interstate commerce. The scope of this sort of regulation has been extensive. There has been not only the paramount consideration of safety, but also the recognition of the fact that fair treatment in other respects aids in conserving the peace and good order which are essential to the maintenance of the service without disastrous interruptions, and in promoting the efficiency which inevitably suffers from a failure to meet the reasonable demands of justice. An absolute duty to furnish safety appliances has been imposed, restrictions of hours of continuous service have been prescribed, standards of a day's work have been established for work and wages, the liability of carriers for injuries to employees has been regulated by the abrogation of the fellow servant rule and the limitation of defenses as to contributory negligence and assumption of risk, and provisions have been enacted to facilitate the amicable settlement of disputes and to protect employees in their freedom to organize for the purpose of safeguarding their interests.

The fundamental consideration which supports this type of legislation is that industry should take care of its human

(*Continued on page 742*)

Two Views on Grade Crossing Problem

A railway officer and a spokesman for the highway users discuss the causes of accidents and their prevention

THE railroads, the public highway authorities and the highway users were represented in a symposium on grade crossing accidents, their cause and cure, that was conducted under the auspices of the Western Society of Engineers at Chicago, on March 25. The position of the railroads was presented by F. E. Morrow, chief engineer of the Chicago & Western Indiana; the attitude of automobile drivers was portrayed by G. W. Barton, manager of the Highway Traffic department of the Chicago Automobile Club, while the problems of the public authorities were outlined by H. E. Surman, engineer of design, Division of Highways of the State of Illinois.

Mr. Morrow discussed both protection and separation, and pointed to the advantage of federal financing of programs to this end. Mr. Barton confined his remarks primarily to the attitude of the driver of highway vehicles toward railway crossing signs and signals. These two papers are abstracted below, Mr. Morrow's comments on the allocation of costs, with particular reference to federal aid, being omitted because of the repeated reference to this phase of the subject in recent issues of the *Railway Age*.

A Railroad Viewpoint

By F. E. Morrow*

We are accustomed to think of highway-railway grade crossings as presenting a considerable hazard, but this hazard has been over-emphasized—largely because highway-railway crossing accidents receive more publicity than other classes of accidents occurring on the highways. There were approximately 882,000 automobile accidents on the highways of the United States in 1934 in which persons were killed or injured, and of these accidents only 5,290, or 0.6 per cent, occurred in collisions with trains. Highway accidents as a whole resulted in the death of about 36,000 persons and in injuries to about 954,000 others, but of these only 1,190, or 3.3 per cent of the deaths, and 4,770 or 0.5 per cent of the injuries, resulted from collisions with trains.

It is of interest to note that of these 882,000 accidents, 561,000 were due to hasty, needless and careless action on the part of automobile drivers, such as excessive speed, driving on the wrong side of the road, violating the rules as to right-of-way, driving off the road, and otherwise driving recklessly. It is also of interest to note that 39.8 per cent of the 882,000 accidents occurred at street intersections, compared with 0.6 per cent at railroad crossings. The statistics also show that during the past 15 years the number killed and injured at highway-railway crossings has not greatly increased, although the number of automobiles in use has increased approximately fourfold. For example, in 1918, when approximately 6,000,000 automobiles were registered 1,131 persons were killed and 3,109 injured at highway-railway crossings, while in 1933, with a registration of about 24,000,000 automobiles, 1,305 were killed and 3,496 injured.

In stating the foregoing facts it is not the purpose to minimize the hazard of these crossings, the toll of death and injury, or the problems presented by these grade crossings. Rather, it is the thought that an understand-

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ing of these problems demands a proper measure of their relation to other problems of similar nature.

Number of Crossings Increases

At the end of 1932, there were approximately 237,000 highway-railway grade crossings in the United States. From 1926 to 1932, inclusive, 10,341 crossings were eliminated; 1,938 by grade separation and 8,403 by other methods, but in the same period 11,726 new crossings were added, thus causing a net increase of 1,385. It will be observed, therefore, that crossings are being added faster than they are being eliminated. The statistics also show that of the 237,000 crossings, only 30,809 were specially protected, and of these, 4,737 had gates, 6,151 had watchmen and 19,921 had other special protection, audible or visible.

Accidents at highway-railway crossings must be reduced, and this can be accomplished by the following measures:

1. Greater care by highway users
2. The abandonment of grade crossings that are not needed
3. The improvement of physical conditions surrounding grade crossings, including standardization of the aspects designating them
4. The installation of visible signals at crossings of considerable hazard
5. The separation of grades at locations where traffic is dense and there is unusual hazard

It is obvious that the largest opportunity for improvement lies in the education of the public in the observance of safe practices in the use of the highways, the regulation of traffic, and the elimination of unsafe drivers and automobiles from our highways. It is a well known fact that a large part of our highway-railway grade crossing accidents result from the failure of automobile drivers to exercise ordinary care and prudence. For example, in 1933, approximately one-third of the accidents were caused by automobiles running into the sides of trains. While it is true that most of these accidents occurred at night, I believe that a train should be clearly visible to the driver of a car with good lights that is proceeding at a reasonable speed.

Many of the highway-railway grade crossings are not necessary and could be abandoned. We know that many highways are seldom used, and by proper planning these could be consolidated with other highways. Highways of all types should be planned on the basis of a coordinated system so as to secure the maximum of safety and value for the money expended on them. Certainly no new crossings should be created until most careful consideration has been given to the need for them and to the possibilities of closing other existing crossings.

Because of the enormous expenditures that would be required, measures for special protection or grade separation can be applied to only a small minority of the crossings. At all others we must rely on the exercise of care by users of the highways—aided, so far as practicable, by improved physical conditions in the vicinity of crossing. In many instances reflectorized crossing signs may be justified.

The use of automatic flashing-light signals to give a visible indication of the approach of trains can be increased considerably. They cannot, however, be installed and maintained at other than the more important highways because of the cost of installing, maintaining and operating them.

It is obvious that the elimination of crossings by grade separation can be accomplished in only a relatively small percentage of the crossings because of the great cost. Grade separations are only being undertaken where traffic is dense and, usually, where the elimination of delay to highway traffic is an important element. There are enough crossings of this kind to absorb all of the available funds for many years to come.

More attention is being given to the standardization of the aspects of signals or warning signs provided at highway-railway crossings. In my opinion, this cannot be over-emphasized and such standardization should be national in its scope. It would be very helpful to motorists if the approach to a highway-railroad crossing should present the same general aspect, whether in California, Maine or any other state. Variations in the aspects of signals are a source of confusion to drivers.

As the Motorist Sees It

By George W. Barton*

Because accidents at highway-railway crossings are so spectacular and since their results are so uniformly gruesome, a large portion of the public has come to feel that grade crossings are responsible for a very large percentage of our annual automobile death toll. But this is not the case, as has been shown by the statistics already cited. However, the grade crossing problem is not so insignificant that it needs no attention. As would naturally be expected, an accident at a grade crossing is far more likely to be serious than one at a highway intersection. As a matter of fact, of each 4½ injuries at railroad crossings, one is a fatality, while in the other classes of automobile accidents only one out of every 36 injuries proves fatal.

Must Understand the Motorist

To understand grade crossing accidents we must have a clear understanding of the characteristics and mental reactions of the motorist. The fact that a large percentage of the grade crossing accidents result from the automobile running into the side of the train is cited quite widely as being ample proof that the motorist insists upon killing himself, regardless of what protection is provided. We don't think that is quite correct. Motorists don't drive with suicidal intent. Motorists, on the whole, include the more intelligent people, who believe that they are capable of judging for themselves when the hazard of any particular situation is sufficiently great to warrant their special attention. When a hazard is plainly obvious, as it was in recent months when the streets were covered with ice, the motorists take the proper precautions to protect themselves.

Most motorists are impatient of restraint and control. This attitude is the result, or the outgrowth, of the manner in which traffic control has been developed in past years. Little was known of the science of traffic engineering and as a result the control of traffic was left to the alderman or other local politicians. Through streets were created and stop signs erected with great abandon. Each community thought that it was necessary to cultivate a metropolitan aspect by installing at least a few red and green stop-and-go signals. Slow signs were installed at many of the intersections not otherwise protected. As a result motorists came to feel that there was no sound reason for observing these various control devices, and that they could be disobeyed with impunity. In the case of unwarranted signs or signals this proved to be the case. This superabundance of control has bred a widespread contempt for traffic regulations of all types. This attitude was also extended to railroad crossing devices. At first, laws were passed and signs installed requiring motorists to stop at every railroad crossing. Obviously this was unreasonable and unfair.

Motorists have been fooled so often by this cry of

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"wolf" that they are becoming difficult to deceive. One of the major problems now facing traffic engineers is that of eliminating this unnecessary control and of permitting the motorist to exercise his own intelligence where the local conditions make that possible. Motorists frequently have arrived at crossings where the automatic lights or wig-wags were operating, only to find that there was a train switching in the circuit, or a slow freight creeping along several hundred yards away. After waiting several seconds they decided that it was safe to proceed, put the car in gear, and went ahead. After this has happened a few times, a motorist quite properly may drive up to a crossing, see a slow freight approaching, and continue onto the tracks, to be struck by a high speed train coming from the opposite direction.

Experiences with warnings that proved false have taught the motorist to believe that there was no real reason for obeying these devices. They have been fooled far too many times. According to the present plans for further grade crossing protection, similar installations are to be made at additional crossings, which may make conditions worse. Each time a motorist is fooled he is going to take just so many additional chances at the more hazardous crossings. In my opinion, it would be far better at the present time if the program of railroad crossing protection followed the trend of the development of street and highway intersection control.

Better, Not More, Signals

Rather than extending the nuisance of unreasonable control, we believe that it would be far better to concentrate expenditures on improving the control at the most important crossings which, on the whole, are already protected by some type of device. We are further strengthened in this opinion by the development of the new streamline trains. We have every reason to fear what may happen when a streamline train going 100 miles per hour, a passenger train going 50 miles an hour and a freight train going 25 miles per hour, all operate the crossing warning device through the same track circuit. To give a 20-sec. warning the signal system will be of such a length that there will be a 40-sec. warning on the approach of a 50-miles-an-hour train and an 80-sec. warning in the case of a 25-miles-an-hour freight. It is certain that no motorist is going to wait 80 seconds for a freight train to cross in front of him. This being the case, isn't it far better to install more flexible control at the more hazardous crossings, than to install a number of additional controls—all to cry "Wolf, wolf"—without any regard to their relative hazards of the crossings? It seems to me that it is an exact parallel to the street intersection problem where so many stop signs have been installed that few of them mean anything.

There is another type of control which we consider unreasonable. While driving down state recently, I came suddenly upon a standard octagonal reflectorized stop sign such as is used at highway intersections, jammed on my brakes, and came to a stop. It was just light enough to permit me to see that I had stopped for a railroad crossing. The crossing was in the middle of a prairie, and the tracks were visible for probably a half mile in each direction. Some miles farther on I had the same experience. If that had happened a few more times, I feel quite certain I might have run through a stop sign at some important highway intersection with disastrous results.

I can't see, by any stretch of the imagination, how it can be reasonable to expect three or four thousand highway vehicles to come to a complete stop at a crossing which may be traversed by 20 or 25 trains in 24 hours. The majority of the motorists hold this same point of view. The use of stop signs in this manner not only may fail to accomplish the job required, in spite of arrests for their violation, and at the same time it may gradually nullify the effectiveness of stop signs at intersections—where they are badly needed. I don't believe that stop signs have any place at a railroad crossing except where the trains operate on such short headway and where the vision is so badly obscured that the motorist would be required to come to a full stop even under the most favorable circumstances, in order to proceed with safety.

Aside from the installation of signs or signals, I think a great opportunity for betterment lies in the improvement of physical conditions surrounding the crossings. One of the first of such improvements, of course, includes the alinement of the approaches to the crossings. Unnecessary curves, gradients, roughness of pavement or obstructions in the pavement, distract the motorist's attention from approaching trains, and thereby constitute a hazard. A great deal of work could be done effectively in removing vision obstructions at crossings. These obstructions range from trees and shrubs and billboards, to box-cars and other railroad equipment that is permitted to stand near the crossings. This latter is a common hazard.

In considering the general problem of grade crossing protection, it is highly desirable to divide all crossings into two major classes. First, those at which the responsibility is placed upon the motorist, and second, those where the railroad would be required to assume the responsibility. At the present time even the insignificant industrial siding that carries a train or less a day is marked by the same standard crossbucks that are provided at intersections where there is a great and definite hazard. It would seem entirely proper that at these minor crossings where there is infrequent service and that at slow speed, the railroad should assume the responsibility and the motorist should be freed from the annoyance of additional meaningless warning signs.

Railroad men in particular point toward the fact that 19 per cent of the fatalities and 38 per cent of the accidents are caused by the motorist running into the side of trains, as proof that crossing protection is somewhat of a wasted effort and that motorists are definitely intent upon killing themselves. This figure is far overemphasized. Statistics issued by the U. S. Bureau of Public Roads in 1926 showed that in two-thirds of the accidents in which the motorists are accused of running into the side of a train, the automobile actually struck the engine or the first car of the train. Recognizing the high speed of both rail and highway traffic, we can readily see that it is purely a matter of luck whether the automobile strikes the engine a few feet back from the front or whether the engine strikes the automobile. It is merely one of these cases where it is a practical tie.

Freight Trains Hard to See at Night

In only one-third of this class of accidents, according to the bureau, did the automobile strike the center of the train. It seems to me to be a testimonial to the alertness of the average motorist that accidents of this type are not greater in number. It is a very simple thing on a dark, foggy, or rainy night to fail to see a freight train standing or moving slowly across the highway. I have frequently had my attention called to the presence of a train on the crossing only by the flashing of the headlights of oncoming automobiles between the wheels of the moving freight train. If there is no

oncoming traffic and if there are no automatic warning lights, or if these automatic lights happen to be located on the opposite side of the train, the motorist's keen eyesight and alertness are the only things which can save him.

Not long ago when 50 and 60 ft. truck-and-trailer trains became popular, the same situation was presented at highway intersections. An unlighted truck passing an intersection was frequently struck in the middle by a high-speed automobile. To correct this difficulty the Illinois motor vehicle law was amended to require that every truck or truck-train in excess of 20 feet in length carry reflectors along its sides. It would seem to me that this same remedy should and could be applied at least to freight cars. If single reflecting units were placed at intervals of ten or fifteen feet along each side of a car, they would cause a sufficient flash to attract the motorist's attention. Such a plan would be inexpensive to adopt and should prove effective.

At the present time obedience to railroad crossing signals is largely dependent upon the motorist's discretion and good judgment. This condition deserves the attention of the railroads, the highway authorities and the motoring public. First the regulations and restrictions should be made reasonable and positive. After the railroad crossing signals have been redesigned so as to mean exactly what they say, then the motorist should be required to obey them. Laws should be passed to this effect and the enforcement agencies instructed to make arrests for disobedience. I want to repeat, however, that this must follow and not precede the change-over of the signal equipment from its present system of operation to one wherein the restrictions are reasonable and definite.

Railroad Pension Act Held Unconstitutional

(*Continued from page 738*)

wastage, whether that is due to accident or age. That view cannot be dismissed as arbitrary or capricious. It is a reasoned conviction based upon abundant experience. The expression of that conviction in law is regulation. When expressed in the government of interstate carriers, with respect to their employees likewise engaged in interstate commerce, it is a regulation of that commerce. As such, so far as the subject matter is concerned, the commerce clause should be held applicable.

In a speech in the Senate on May 7, Senator Wagner, one of the sponsors of the railroad pension bill, expressed the opinion that the social security bill provisions for retirement pensions in industry generally might be amended to include railroad employees. He said the pension plan of that bill does not rest upon the commerce power at all but upon the power of the federal government to tax for a public purpose and expend money for the general welfare. That bill as it now stands, however, proposes pensions which are less liberal than those paid by the railroads under their existing systems and on a scale far below that of the railroad retirement act. Representatives of the railroad labor organizations discussed the possibility of preparing a new bill which would avoid some of the detail objections to the law and are expected to confer at an early date with Co-ordinator Eastman and Chairman Latimer of the Railroad Retirement Board on the subject. The Senate finance committee, which has charge of the security bill, planned to ask the Attorney General for an opinion on the effect of the court decision on the provisions of the bill. The executive council of the American Federation of Labor suggested a constitutional amendment which would remove the court's objections. The Department of Justice has made a report on the decision to the President.

Tie Producer Adopts Grade Marking

THE grade marking of railway crossties by means of a stenciled brand on the end, that shows both the name of the vendor and the size, and which is being applied to hardwood ties as well as to softwood ties, is a practice that has been adopted recently by the Hobbs-Western Company, St. Louis, Mo. The plan includes a guarantee of the grade in the event that ties are

Hobbs-Western Ties on a Local Yard at Arkinda, Ark.

shipped without having been inspected before loading by the railway's inspector.

This plan was brought about as an elaboration of the practice adopted by this company some time ago of segregating serviceable rejects and No. 1 ties from the other sizes, the grade marking being confined to the No. 2, 3, 4 and 5 ties. The ties produced in the company's own operation are graded as they are manufactured, while the ties purchased from small producers are graded on the ground before loading. It is said that this plan was adopted only after a thorough training of a corps of inspectors in the provisions of the Specifications for Crossties of the American Railway Engineering Association and after careful test checks had given assurance of the required uniformity in grading by all members of the staff.

* * *

On the Union Pacific at Umatilla, Ore.

Traffic Clubs Meet at Virginia Beach

Declare against government ownership of transportation agencies—Rayburn among speakers

DECLARATIONS against government ownership of the railways, an authoritative prediction that motor carrier and fourth section relief legislation would be enacted by the present Congress, a proposal for an entirely new federal set-up for transport regulation, and a comprehensive analysis of the depression's effect on railway revenues featured addresses and proceedings at the semi-annual meeting of the Associated Traffic Clubs of America, held on May 7 and 8 at Virginia Beach, Va.

The opposition to government ownership was first voiced by the association itself when, by adopting the report of its board of directors, it added, to the Associated Traffic Clubs' declaration of aims, the following: "Our association stands for the private ownership and operation of all transport agencies, fair conditions of competition as among all kinds of transport agencies, and an Interstate Commerce Commission composed of men fitted by character, ability and training for the positions to which they are appointed."

Later, in his address at the banquet on the evening of May 7, Representative Samuel B. Rayburn, of Texas, chairman of the House of Representatives committee on interstate and foreign commerce, expressed similar views on these questions, dismissing government ownership specifically with the declaration: "I oppose government ownership of railroads. It may come, but it should be avoided as long as possible. Knowing the power of organized minorities in the electorate, I tremble for the future of the republic when I contemplate the addition of more than a million people to the civil rolls of the government." Mr. Rayburn made the prediction that the motor carrier and the fourth section bills would be enacted when he expressed his committee's hope "to report and pass" these measures "before this session of Congress closes."

Other speakers at the meeting were Karl Knox Gartner, of Washington, D. C., a former attorney-examiner for the Interstate Commerce Commission, who outlined his proposal for a new regulatory set-up, and Joseph R. Warner, counselor, of New York, who discussed "Some Aspects of the Traffic Trend." H. W. Roe, traffic manager, Mid-Continent Petroleum Corporation, Tulsa, Okla., and president of the Associated Traffic Clubs, presided at the meeting's business sessions, while the executive vice-president—J. M. Fitzgerald, vice-chairman, Committee on Public Relations of the Eastern Railroads, New York—acted as toastmaster at the banquet. The final figures showed that 609 delegates and guests, representing 42 clubs, had registered at the meeting. A total of 706 attended the banquet. The board of directors selected Indianapolis, Ind., as the place for the fourteenth annual meeting, to be held this fall on dates to be set later by the executive committee.

Address of Representative Rayburn

Representative Rayburn opened with a brief outline of some of the problems which come before the committee on interstate and foreign commerce and continued to list some of the measures that have been reported by it and passed by Congress during the past two years. This list included the Emergency Transportation Act of 1933, the Securities Act of 1933, the Stock Exchange Act of 1934 and the Communications Act of 1934. Next came his list of pending measures, including the fourth section and motor carrier bills, as the prelude to Mr. Rayburn's addressing himself "to the general problem of transportation and the work of the Interstate Commerce Commission."

He told how transportation to our country's pioneers meant water transportation, supplemented by the slow-moving wagon and how these came to be superceded by the railways until "for so long we have taken it for granted that freight in large quantities would move almost entirely by rail that we rub our eyes in amazement to see tonnage returning to the highways." Then answering with an emphatic "no" his own question as to whether railroads are obsolete, Mr. Rayburn turned to a discussion of the Interstate Commerce Commission, of which he said: "Its career during nearly half a century has been creditable. Its labors during recent years have been prodigious, and the prospects are that it will have increased responsibilities in the near future."

Opposes Transport Department in Cabinet

Mr. Rayburn further characterized the commission as "a group of experts" in the creation of which Congress has endeavored "to have an independent, non-partisan agency which will function free from political pressure." Because of this latter aspect, he continued, "It would have been a great mistake to have placed the regulation of transportation in an executive department," since "the members of Congress would have been daily annoyed with the request to see the appropriate member of the cabinet with reference to reparations or some shipment of scrap iron or any one of the thousands of rates that are published from time to time." Also, in Mr. Rayburn's judgment, "it would be a great mistake to create any agency which would in any way duplicate or interfere with the work of the commission." Believing that "we can get results that are most satisfactory by placing all the responsibility in one place," he disagrees with those who advocate new commissions "to regulate the more novel agencies of transport" and holds to the view that "all laws governing the regulation of transportation by the federal government should be administered by one commission."

As Mr. Rayburn sees the rail-highway struggle "it is not so much between the steel railroad and the concrete highway as between the motive power to be used in conducting transportation." The highway, he continued, has developed a most flexible instrumentality of locomotion but "engineers are pointing out to the railroad managements that they can use this very flexible and relatively inexpensive motive power on their steel rails and that they can adopt their freight and passenger equipment to the requirements of the Diesel engine and thereby hold on the steel rails most of the passenger and freight business." The railroads have an advantage in this connection, he thinks, because local highway traffic is jealous of its public highways and "resents the interference of interstate and common carrier vehicles;" it "will inev-

itably impose such restrictions upon the use of the public roads as will make it both safe and convenient for the local users." But companies "that operate on their privately-owned rights-of-way will be entirely free to run any sort of vehicle which economy, dispatch, and safety of person and goods may require." Yet in this struggle to readapt service and equipment to modern needs, Mr. Rayburn finds that the railroads, too, have some handicaps, resulting from "tradition" and "a financial structure imposed upon their present equipment."

Government Ownership Would Be "Most Unfortunate"

This pressure to readapt equipment "so as to meet highway competition and render that competition harmless" Mr. Rayburn added, would, of course, be taken from railroad managements if government ownership came; but this in his judgment would be "most unfortunate both for the railroads and the country." It would place on the taxpayer "the burden of purchasing the railroads with their present equipment and of operating them along traditional lines for an indefinite period. Such an operation would drive more and more tonnage to the highways. This would have the effect of making it more expensive to maintain the public highways. In fact, it would force on the public the expense of two systems of transportation without the conveniences which it is easily possible to achieve through a continuation of the division of labor between the railroad and the highway to which we have been accustomed . . . Tonnage and passengers are leaving the railroads and seeking the common carrier service on the public roads merely because the instrumentalities for transport incident to the using of oil as a fuel are attracting shippers and travelers alike. The railroads by using the same or better devices on their own privately-owned rights-of-way can bring back to themselves the business they are losing."

Thus, Mr. Rayburn predicted that "intelligent use of credit to promote such an adjustment will accomplish far more than if the government could be Santa Claus to all who would like to exchange their railroad securities for government bonds." In this latter connection he had previously noted that "there is now a very strong movement, particularly on the part of owners of junior bonds of railroads, to have the government take over the railroads."

Sees Railroads Organized for Self-Help

He does not think, however, that "Congress will find it necessary to project its will into the management of the carriers in order to bring about desired economies" because "the railroad managements themselves are organizing with a view to responding to the revelations of the two-years survey of their activities which was authorized by Congress." Neither is he persuaded that present conditions require "any grand new scheme of regulation," for he regards as "the counsel of folly" the advice of those economists who "want us to abandon and scrap thousands of miles of railroad and to legislate vehicles off the highways now in existence." His position is rather that "government is never justified in legislating a competitor out of business" but government is nevertheless duty-bound "to see that the competitor is placed under reasonable regulation." And Mr. Rayburn dismisses the complaint that the I. C. C. is "railroad-minded" with an expression of confidence that it "would promptly become bus- and truck-minded" as well if Congress should ask it to regulate motor vehicles. Furthermore, he is not persuaded that federal regulation of motor vehicles would require any large addition to the personnel of the commission, having become "impressed by the large percentage of such traffic that moves relatively short distances."

In closing Mr. Rayburn pointed out that, in the final analysis, transport agencies must work out their own salvation, for, while regulation can prevent cutthroat competition and the ruining of highways by vehicles too heavy or too heavily loaded, it will create no tonnage. In this connection, however, he stated it to be his belief that "the initiative and resourcefulness of our people will find expression in the management of our transportation companies."

New Regulatory Set-Up Proposed

Mr. Gartner's proposal for a new regulatory plan contemplates the creation of a dual set-up comprised of an administrator supplemented by an independent rate tribunal. His address was a comprehensive exposition of such a plan and an argument in its favor. The complete change that has overtaken the transportation industry within the past 15 years, he said, completely alters the regulatory problem, which has become one of determining how "to distribute the available transportation" between the several competitors. The solution of this problem, he continued, "demands an entirely different kind of regulatory agency than the commission type."

From this premise Mr. Gartner proceeded to consider first the scope of the regulatory power to be exercised and found that the federal power in the field of interstate commerce is full and complete. Thus, he further held, this power should be exercised not only over all public carriers but also over private carriers by water and highway in interstate commerce. Because of the ability of such private carriers to undermine public carriers, Mr. Gartner regards the former as presenting "the crux of the regulatory problem." He would therefore initiate control over them by requiring that they register with the federal regulatory agency at a nominal fee for each vehicle or vessel. From this requirement owner-operators would be exempt.

Considering the purpose that the regulatory agency shall serve, Mr. Gartner placed first its duty of providing "the distribution of the available transportation among the competing kinds of carriers and among the competing elements in each kind. . . ." And it should make the competition fair, for only then "does the law of inherent economic efficiency operate without artificial thwart." Here came his discussion of "fair competition," which pointed out that the field is not equitable when competing agencies have different wage standards or are subjected to varying degrees of regulation. But with these matters adjusted on an equitable basis, Mr. Gartner continued, "the public interest is completely fulfilled when each kind of transportation is placed in active competition with every other kind of transportation on the basis of their relative costs and when the only limitation upon the minimum of charges is the cost of the lowest cost public operator in the particular kind of transportation between the particular termini." The Eastman motor vehicle bill, it seems to him, "is fundamentally defective" in its failure "to provide for this low cost of operation factor as a limitation upon the minimum rate-making power of the regulating agency."

Regulation Should Be Based on Research

The regulatory agency which could evolve the fair competitive set-up contemplated by his plan, Mr. Gartner stipulated, "must be organized as a comprehensive research laboratory for the scientific ascertainment of the necessary administrative facts upon which the agency must act, as distinguished from a commission designed

to arrive at the administrative fact through prolonged consideration of masses of testimony and evidence offered in oral hearings." He would, however, constitute the agency so that "a forum is afforded for the adjudication of patron complaints." Also, he would have the regulatory agency co-operate with the war and navy departments to the end that transport may be in tune with national defense plans. Among other powers that Mr. Gartner would vest in the regulatory agency is that of fixing wages so as to maintain an adequate standard of living for transport workers.

Objecting to the present set-up, which vests in the I. C. C. legislative, judicial and administrative functions, Mr. Gartner, in outlining the dual agency contemplated by his plan, considered first his proposed "rate tribunal or transportation court," designed to perform the judicial functions. This would be a court of special jurisdiction to try complaints of railroad patrons, although both railroads and the patrons would retain their rights of appeal to federal courts. The transportation court, among other attributes, would have equity powers to pass, for example, on "reasonable relationships" in rates; but it would lack the power to prescribe the manner in which relationships found unreasonable should be adjusted.

Under Mr. Gartner's plan, the administrative and quasi-legislative functions of regulation would be performed by a "Transportation Administrator," who would function "pursuant to the conference method as opposed to the oral hearings method. The conference would be held pursuant to a rule issued by the administrator against the carriers whose actions would be affected, requiring them to appear before a deputy administrator . . . and show cause why the administrative direction set forth in the rule should not be put into effect. Such rule would have attached to it the research evidence reduced to the form of statistical or rate studies, upon which the administrative course proposed in the rule is based." Carriers would in the conferences be permitted to offset the administrator's data with other studies of their own, and any orders of the administrator would be subject to review in the courts.

Functions of Proposed Administrator

In other words, as Mr. Gartner visualizes him, the administrator "would personalize every function and service comprehended in the governmental responsibility to supply the public with the public transportation which it is the duty of the government to furnish, as distinguished from the duty to afford a forum for the satisfaction of patron complaints. In a sense the administrator would be the sponsor for all public carriers of whatever kind, for the purpose of co-ordinating the whole into the best possible national transportation machine." In this connection, if some transport agency desirable in the public interest, were losing out, " a subsidy would be arranged" but such government aid would not be of a kind to disturb the previously-established economic balance based upon inherent efficiency. And Mr. Gartner does not think the administrator would have to be a super-man—"just one real executive is needed." In order to be sure that such a man was obtained he would provide the administrator or agency, with an adequate salary, a 15-year term and otherwise fix requirements so as to divorce the office—as well as those of members of the proposed transportation court—from politics.

He closed with a critical analysis of Co-ordinator Eastman's plan for the reorganization of the Interstate Commerce Commission, following this with a challenge to anyone to devise a plan better suited than his own to current conditions. He did not contend that his plan "is perfect" but he feels that, unless his challenge is accepted, his proposal is entitled to serious consideration "as something constructive upon which all interests can consolidate their support."

Traffic Trends Analyzed

In his address on "Some Aspects of the Traffic Trend" Mr. Warner dealt entirely in revenue statistics because he prefers "to think of traffic, when considering it from the public or general business standpoint, more in the nature of what it really represents than a rather meaningless aggregate of quantities involving everything from silk to sand, with each kind of traffic having its own peculiarities and within itself varying lengths of haul." Proceeding therefore on this revenue basis he cited first "the singular yearly pattern of freight revenues since the depression. . . . the rather startling fact that in every year but one since the depression began, railroad traffic, as reflected by revenues, has exhibited a pronounced effort to stabilize or 'hold' in the early part of the year and then collapse." This becomes clear, he explained, when the figures are corrected for normal seasonal variations.

Mr. Warner then analyzed revenue statistics by commodities in an effort to determine what commodity groups were primarily responsible for this situation. He was unable to assign the responsibility exactly but found, at this point, that "manufacturers and products of mines played their part" and that although "the vicissitudes of agriculture contributed to the result, the movement of agricultural products was not in itself the primary cause." But whatever may have been the exact cause, he continued, "the consequence is apparent" because it is in the last half of the year that the railroads as a whole make their money and "with these seasonal peaks missing it was of course inevitable that the annual results, from the standpoint of net, should have made a sad picture indeed." In his exposition of this statement Mr. Warner reviewed 1934 revenues, pointing out that "if traffic in the late summer and autumn months had borne anything like the heretofore normal relationship to that of the first half of the year, the railroad income account for 1934 would have presented a very different picture." Likewise, he continued, traffic over the last several months "has been an almost exact replica of the corresponding period a year previous. This means that although revenues are now approximately at the same level as a year ago, they are also some 12 per cent above the seasonally equated level in the late months of 1934. . . . This improvement since last fall is, I believe, quite overlooked because of the common practice of judging traffic and revenues solely in relation to those of the corresponding period in the preceding year. If the present level should hold through, seasonally equated, to the end of the year, without any fundamental improvement, the net earnings for the year should make a considerably better showing than now generally anticipated." On the other hand if traffic "fails to follow the normal seasonal trend and instead adheres to the peculiar precedent established throughout the depression then the outlook will be discouraging, not only from the standpoint of the railroads and their security holders, but to industry in general which depends in no small degree upon railroad purchasing power."

With next a reference to how the lower base on which revenue fluctuations are now measured produces sometimes startling percentage figures for traffic increases, Mr. Warner proceeded to an analysis of the relative drop in revenues from the various classes of commodities. Taking carload, figures, after eliminating l.c.l. with brief comment, he set up the comparative percentage declines

which 1934 revenues from various carload commodities represented when related to the 1928-1929 average. Revenues from products of forests had declined the most —65.5 per cent—while manufacturers and miscellaneous was next with a 45.5 per cent drop. Other losses were: Products of mines, 40.7 per cent; products of agriculture, 38.6 per cent; animals and products, 15.1 per cent. The relatively modest decrease in the latter, Mr. Warner found interesting as reflecting "not a bad showing when we stop to reflect that probably no traffic diversion has been more generally apparent or widely heralded than that in this classification in which the growth of the trucked-in livestock to the principal markets has appeared simply appalling from the railroad standpoint." After, in similar fashion, commenting briefly on the relative percentage revenue losses in each of the other commodity groups Mr. Warner turned to the 45 per cent loss in revenues from manufacturers and miscellaneous, which, notwithstanding this heavy loss, "still accounts for one-third of total freight revenues."

In continuing along this line Mr. Warner shuffled the figures to set up the gross revenue losses in the various classifications as distinct from the relative degree of loss from each. Here manufacturers and miscellaneous led the list, the 1934 revenues from such traffic having been $770,238,000 or 35.5 per cent under the 1928-1929 average. This revelation was followed through with another shuffle and rearrangement of the data "to show how the losses in revenues have fallen as between what might be classified as consumers' and durable goods respectively."

Losses in Revenues from Durable Goods

He found that of 1928-1929 total freight revenues, 31.9 per cent was attributable to consumers' goods, with durable goods a close second, accounting for 28.8 per cent. The remaining two-fifths of the revenues, of which coal accounted for one-half and l.c.l. one-quarter, Mr. Warner was unable to assign definitely to either the consumer or the durable goods category. Considering the revenues definitely assignable he found the losses for 1934 from the pre-depression level to have been 61 per cent in revenues from durable goods as against a 33 per cent loss in the case of consumers' goods. It seemed to him that "the loss in revenue from consumers' goods, which are most susceptible to highway transportation, and in which the rate erosion has presumably been greatest, is less rather than larger than might have been expected."

Thus the proportion of total freight revenue derived from consumers' goods in the year 1934 "had advanced to 38.4 per cent as against the pre-depression proportion of 31.9 per cent, an increase of 6.5 points, while the proportion of total freight revenues derived from durable goods had shrunk to 20.2 per cent, as against the pre-depression level of 28.8 per cent, a decline of 8.6 points. As indicative of the amounts involved in these spreads, Mr. Warner pointed out that "a recovery in the revenue from the traffic classed as durable goods, to a parity with the level maintained by the revenue from consumers' goods, viz., to two-thirds of the pre-depression level, should in itself increase freight revenues by $390,000,000. And if the revenues from the mixed goods, other than coal, were also to increase to two-thirds of the pre-depression level, this would add approximately $140,000,000. These two increases together would aggregate in round figures considerably over a half billion dollars, and this gives no recognition to the increase in both coal and consumers' goods which undoubtedly would accompany such an expansion in the production of durable goods. The railroad industry itself fits very deeply into this circle in the sense that increased traffic and revenues would quickly be reflected in increased expenditures for materials and supplies."

Mr. Warner next considered the question of rates, pointing out how the railroads were never permitted in good times to earn a "fair return" and then asking if, in the abstract at least, it is not logical to argue that the need for increasing charges during a depression "arises out of the failure of the commission to have placed rates on an adequate plane when business could easily have supported it." He answered those criticizing railroads for financing through bond issues by asking "what industry would or could have raised equity money in the decade following the war if limited to the low return on investment realized by the railroads?" He conceded that "some carriers do need revision of their debt structure" but nevertheless held that "the capital invested in the railroads is entitled to some consideration in the light of the record. It should not be judged solely on the premise that it should share the full burdens of the depression ratably with other industry which, unlike the railroads, was allowed to accumulate large profits and resources in the era of prosperity. And most of all, it should not be singled out of all industry for experimentation is social reform."

Capital, Like Labor, Has Seniority Ratings

Referring to labor's charge that railway employment "is prejudiced for the benefit of the bondholder," Mr. Warner refused to concede that the usual comparison "between employment and fixed charges" is a valid one. This argument, he explained, overlooks the fact that "railroad capital, like railroad labor, has seniority ratings and that bonds fall in the senior grades." He therefore held that such comparisons "between the position of the bondholder and labor should be limited to that of the labor personnel with a high seniority rating," contending further in this connection that "if the total loss in employment and wages from 1928-1929 (not the grossly inflated figures of 1920 reflecting government inefficiency and politics) is a measure of labor's contribution, then the comparison should be with the total investment in the railroads represented by both bonds and stocks."

In closing, Mr. Warner referred to the possibility of higher rates on present low-rate commodities if the loss of high-grade traffic continues, and criticized some "inconsistent rate theories" being currently advanced. He thinks, in short, that "to those of us who recognize that we all have a burden to share on this earth, the cost for railroad transportation service of something under seven cents out of each dollar of the wholesale value of the shipment would not seem to constitute a prohibitive tax."

Other Proceedings

In addition to the addresses, the meeting's proceedings included reports of the various Associated Traffic Clubs standing committees and the usual discussion of traffic club problems and activities. The report of the board of directors was presented by the chairman, H. A. Palmer, editor and manager of the Traffic World, Chicago. In addition to its action in opposition to government ownership, the board proposed a resolution condemning various "make-work" bills now before Congress as part of railway labor's legislative program. These include the six-hour day bills, the train-length, full crew and hours of service limits bills, and the government signal and track inspection bills. This resolution was approved in the meeting, but it must, under the A. T. C. constitution, be ratified by a majority of the member clubs before it becomes the official view of the association.

Extension of Labor Restrictions Predicted

Co-ordinator Eastman reviews possibilities in transportation situation

A PREDICTION that the railroads will find themselves faced with an extension of the restrictions on reductions in railroad employment contained in Section 7 (b) of the emergency transportation act was made by Co-ordinator Eastman in an address before the National Association of Mutual Savings Banks at New York on May 8. This prediction, or "guess" as he called it, was made on the theory that the railroad labor organizations, rather than the railroads, will prevail in the pending controversy on the subject in Congress, as a result of which the labor organizations have had introduced a resolution to extend Title I of the emergency act for another year. Although Mr. Eastman said that one great barrier to collective action by the railroads has been the restrictions in the law, he expressed the opinion that if it is extended the railroads ought to go ahead with plans for co-ordination and economy, "even if, under the statutory restrictions, it is necessary to pay men for doing nothing," on the theory that the benefits will accrue later.

Reviews Status of His Recommendations

Mr. Eastman also took occasion to review the status of his various recommendations and the degree of progress made under them, and gave an outline of the forthcoming report of his Section of Transportation Service on the handling of carload freight. He said he had not lost confidence, although he had found that more time is being required than expected to bring about accomplishment. He also reviewed his legislative recommendations, saying that "it now seems clear that Congress will at least take a long step in the right direction." Some additional discussion of the subject was included in another address before the Wharton School of Finance and Commerce, of the University of Pennsylvania, at Philadelphia, on May 9. In his New York address Mr. Eastman said in part:

> Just about a year ago I tried to look a little way into the railroad future and tell you what I thought I saw. I am now more impressed with what some wise man has called the "inevitability of graduality," and find it necessary to project my vision a little further into the future to see all that I then saw. Streamline trains may move fast, but the railroads as an institution move very slowly. Nor can I be too critical of them in this respect, because I have not myself moved as quickly as I had hoped.
>
> Not by one whit have I lost confidence in the possibility of reducing railroad expense materially by improved methods and equipment and particularly by greater co-operation of the railroads with each other. I still believe that railroad traffic and revenues can be increased materially by improved service and a thorough overhauling and revision of the rate structure. I am still confident that conditions generally can be much improved if all important forms of transportation are brought under the reasonable, impartial and stabilizing control of a single federal body. I continue in the conviction that these various forms of transportation can, without loss of the competition which is of real value, curb cutthroat competition and avail themselves of the many opportunities to work together as allies.
>
> My belief in all these possibilities has in fact grown stronger. Yet I see more clearly the difficulties in the way of their realization. There are obstacles of temperament, custom, brain paths, conflict in interests, finance, human welfare, and the time required for experimentation and proof. They cannot be overcome without patient, concentrated, enduring effort.
>
> We have shown that the merchandise traffic of the railroads is handled in a very wasteful, inefficient way, at a loss, and under excessively complex rates which are not well suited to modern competition. Our plan to cure these evils was too far-reaching and radical for early adoption. The railroads regard it as impracticable. I have seen no proof that it is, but concede that it would require a capacity for collective action and centralized leadership on their part which is yet in the making. Individual operations have been improved. The best path to the needed collective action may lie in step-by-step experiments, although the problem calls for bold and audacious treatment, if that were possible.
>
> We have shown that beginning with 1920 the railroads lost passenger traffic rapidly and steadily, until it is now handled in greatly diminished volume at a large financial loss. Of late they have made notable improvements in passenger equipment and service and notable experiments in fare reductions. In our report we pointed out many ways of improving operation, equipment and service which remain to be exploited. We may be over-sanguine on some of these points, but certainly there is room for improvement. The opportunities for profitable co-operation in passenger service by pooling and otherwise are as yet almost wholly untouched.

Report on Freight Traffic to Indicate Further Economies

> A forthcoming report on freight traffic, other than merchandise, will cover rail, water, highway and pipe-line operations. Many facts and statistics will be presented which have never hitherto been available, and particularly comparative costs in much detail. The report will show the extraordinary part which yard and terminal operations play in railroad expense and in time consumed. It will show that the heavy tonnage train is a most economical means of transport under certain conditions, but that where it entails great expense and delay in assembly, in classification and reclassification en route, and in ultimate distribution, there is serious question whether the advantage in line-haul expense is not often offset by the disadvantage in other forms of expense and in quality of service. Experiments with shorter and more frequent trains hauled by new types of motive power will be suggested, and also development of containers transferable to and from truck bodies and the use of trucks where their operation is cheaper and more flexible than rail service. Attention will be given to the need for readjusting service, particularly through the use of containers, to modern commercial needs and competitive transportation conditions, and for a thorough revision of the rate structure.
>
> The immediate railroad reaction will probably be skeptical. We shall not object to that, if the skepticism is open-minded. The facts and statistics which have been accumulated, with the help of the railroads, other forms of transportation, shippers, and manufacturers, strongly support the tentative conclusions and cannot be lightly dismissed. Certainly they show the need for thorough inquiry along lines which are not always in accord with present railroad practice.
>
> In a report on car pooling we have shown the opportunities for reduction in empty-car mileage and for improvements in methods of repair, purchase, and standardization which lie in the pooling of freight cars. Our railroad friends say that we are wrong on both facts and principles, and have adopted an alternative method of reducing the unnecessary empty-car mileage. Our mutual consideration of the facts and principles has not ended, and we are prepared to support our conclusions. Yet I concede that in their present frame of mind the railroad managements could not successfully administer a car pool if one were forced upon them. The subject is one which over a long period of years has become embalmed in strong prejudices. It will yield only to the slow processes of education. In the

meantime I hope for the best from the alternative method of saving empty car-mileage.

We have shown, with the help of many committees of railroad officers, that there are great physical possibilities for saving expense and improving service by unifying terminal operations in communities where two or more railroads meet. However, only gradual progress can be expected. The same is true of the railroad shops. Committees are exploring the opportunities for concentration of repair work in the better shops and for modernization of equipment. Many such opportunities will be discovered, but it will take much time to work them out.

We have shown that both construction and operating costs can be reduced materially by reasonable standardization and simplification of equipment, materials and supplies, and by better purchasing methods. We shall soon show that the methods employed in the disposition of scrap and in the handling of supplies can be improved. As much progress has, I think, been made in the betterment of purchasing methods as the present N. R. A. Codes permit. Some progress has been made in standardization and simplification, but nothing like what is both desirable and possible. Further progress must await the establishment by the railroads of an adequate central bureau for scientific research. There is nothing more important which the new Association of American Railroads can do than to establish an adequate bureau of this kind. No doubt because this importance is realized, the steps in this direction have as yet been short and slow.

There are a large number of similar matters on which we have done or are doing much. Progress has been made. The fact is, however, that the process of translating research into action on all these matters has as yet hardly begun. How can we get action?

Labor Restrictions Great Barrier

One great barrier to action has been the restrictions of the Emergency Act upon reduction in railroad employment. I have recommended, in their place, a plan of dismissal compensation for men displaced by coordination projects. It is in line with modern thought. It recognizes that an industry ought not, where men have given it faithful service, to throw them suddenly out in the street without recompense, if such treatment can possibly be avoided. The plan grades the compensation with age and length of service, which means with ability to secure employment elsewhere. It is confined to displacements resulting from coordination projects, which in themselves provide the means for the compensation. It would defer, but not prevent, the full realization of economies.

There has been no indication that either the railroads or their employees favor this plan. With the lines drawn in that way, my guess is that the employees will win out and the railroads will find themselves faced with an extension of restrictions of the same kind as now exist. If this proves to be the case, what they ought to do is, I believe, quite clear. They ought to go ahead with plans for coordination and economy, even if, under the statutory restrictions, it is necessary to pay men for doing nothing. The benefits will accrue as employees die or retire. They may come speedily, if traffic increases so that other work can be found for the idle men, and the employees ought not to forget that one of the great objects of cheaper and better operation is to increase traffic. When the British railways were consolidated into four systems soon after the World War, they were prohibited from displacing men by reason of the consolidations, but the economies were in time secured in the way I have indicated.

Railroad Association Needs Help

But how can we get action from the managements? The new Association of American Railroads is their answer to this question, and so far as it goes, it is a good answer. I have long been in favor of a central organization of the railroads based on these principles and given all possible power to carry them into effect. The new association goes much further in this direction than any which has preceded it.

Nevertheless I feel sure that the Association has found, and will find, it very difficult to act aggressively and effectively. The habits and viewpoints of a lifetime are not changed by the mere creation of an organization, and the men who direct the affairs of the association will not find it easy to follow the new trains of thought upon which its successful functioning will depend. Nor are its legal powers clear. It will need aid, support, and stimulation from the government. I believe that it is much more likely that the association will function effectively with than without a federal officer like the Coordinator in the field. He may be annoying and irritating and some of his ideas may be unsound, but nevertheless he will constitute a continual challenge and spur to action. It will be much less easy for the association to dismiss or neglect a project which is likely to meet with some bitter opposition in the railroad world, if there is such a federal officer who can take it up and bring it into the limelight; and most projects that are of consequence will stir up such opposition.

Apparently what the railroads object to chiefly is giving a federal officer power to require changes in their operations and ways of doing business. It happens that this power to order is wholly remedial, because it is for the purpose of enabling the railroads to save expense or increase revenue, and it is subject to complete review by the commission. With such a right of appeal, to say nothing of the protection which the courts will afford against unconstitutional or arbitrary action, the railroads ought to be able to bear up under a power to issue orders which is designed for their benefit. As a matter of fact, the power is one which should be held strictly in reserve, for voluntary effort on these matters is much more likely to be successful than compelled effort. Nevertheless, such authority can be very useful on occasion, and lacking such equipment the influence of the federal officer would be greatly weakened.

It should not be forgotten, also, that the railroads are by no means the only agency of importance in the transportation field. As I see the situation, the railroads have created a new organization which can be of great use in promoting the collective action on their part for the improvement of methods of operation and ways of doing business which conditions imperatively demand, but its usefulness will be much increased by help from the government. If this method of securing the needed collective action does not succeed, the alternatives are actual unification of the railroad properties in some form under either private or public control.

In the Philadelphia speech Mr. Eastman also said:

Revision of Rate Structure

My staff has been trying to lay the foundation for such a reexamination and revision of the freight-rate structure by accumulating the necessary data, and in a report which I expect to make public before the end of the month, what they have found out will be presented to the world. It will not settle the problem, for that is much too big to be settled in any single report of this character, but I believe that it will go very far to clarify both the issues and the facts and to point the way to the action which will eventually have to be taken. In the process I also believe that it will be possible to simplify the rate structure greatly—a consummation which is devoutly to be wished, because the present structure is incredibly complex and confused.

Closely related to the question of rates is the question whether the service which is now furnished is suited to competitive conditions and modern commercial needs. In our forthcoming report we shall show that two sizes of containers, one which will load two to the car and the other which will load five to the car, will meet commercial needs admirably and can be given rates comparable with carload rates. These containers can be adapted readily to almost any type of commodity, including perishable commodities which require refrigeration or artificial heat. They can even be used for such a commodity as anthracite coal, and may meet the present trucking problem on such coal, since they can be transferred from the car to the chassis of a truck and taken direct without transfer of contents to the consumer's premises.

Our analysis has shown the tremendous part which yard and terminal operations play in railroad expense and in time consumed by shipments. There are three possible ways in which this situation can be improved. One is to reduce the amount and expense of such operations by the unification of terminal service at the important centers where two or more railroads meet. Another way is to utilize motor trucks to a greater extent in terminal operations, for trucks often have a decided advantage over rail switching operations in both cost and flexibility. The third way is one which I know that the railroads will dispute, and it is to use shorter and more frequent trains under certain conditions. The heavy tonnage train is very economical in line haul, but at times it entails altogether disproportionate expense and delay in the assembly of cars at origin, their classification and reclassification en route, and their distribution to final destinations. The use of smaller and more flexible units is at least worthy of serious study, particularly in view of the new types of motive power which are now making their appearance.

ALL EXISTING RAILROAD FREIGHT traffic records at the Rouge plant of the Ford Motor Company at Dearborn, Mich., were broken in March for the second consecutive month, when 34,955 cars, loaded and empty, were handled, the total representing an increase of 11 per cent over the previous record of 31,500 cars moved through the plant yards in February. The last previous high was a total of 29,500 cars which passed through the yards in April, 1930. Approximately 80 per cent of all freight moving in and out of Ford plants throughout the United States is by rail.

NEWS

Three-Months Railway Net a Return of 1.69 Per Cent

$84,773,560 compares with the 1934 total of $112,696,133 or 2.24 per cent

Class I railroads for the first three months of 1935 had a net railway operating income of $84,773,560, which was at the annual rate of return of 1.69 per cent on their property investment, according to reports compiled by the Bureau of Railway Economics. In the first three months of 1934, their net railway operating income was $112,696,133, or 2.24 per cent. Operating revenues for the three months totaled $800,057,121, compared with $799,672,358 for the same period in 1934. Operating expenses amounted to $626,358,362, compared with $593,742,384 for the same period in 1934, or an increase of 5.5 per cent.

Class I railroads in the first three months of 1935 paid $60,028,778 in taxes, compared with $62,537,112 in the same period in 1934, or a reduction of 4 per cent. For the month of March alone, the tax bill amounted to $20,203,275, a reduction of 5.9 per cent under March, 1934.

Fifty Class I railroads failed to earn expenses and taxes in the first three months of 1935, of which 11 were in the eastern district, 10 in the southern and 29 in the western.

Class I railroads for March had a net of $37,850,965, which, for that month, was at the annual rate of 1.89 per cent. In March, 1934, their net was $52,217,083, or 2.60 per cent. Operating revenues for March amounted to $280,898,558, compared with $293,200,602 in March, 1934, a decrease of 4.2 per cent. Operating expenses in March totaled $213,278,032, compared with $209,270,377 in the same month in 1934, or an increase of 1.9 per cent.

Class I railroads in the eastern district for three months had a net of $66,798,404, at the rate of 2.81 per cent. For the same period in 1934, their net was $73,925,476, or 3.11 per cent. Operating revenues in the Eastern district for the three months totaled $424,208,793, compared with $424,360,673 in the corresponding period in 1934, while operating expenses totaled $313,445,334, an increase of 2.9 per cent. Railroads in the Eastern district for March had a net of $26,373,970, compared with $33,345,968 in March, 1934.

Class I railroads in the Southern district for the three months had a net of $12,516,359, at the rate of 1.47 per cent. For the same period in 1934, their net amounted to $19,705,048, at the rate of 2.31 per cent. Operating revenues in the Southern district for three months amounted to $106,616,308, a decrease of 2.2 per cent below the same period in 1934, while operating expenses totaled $83,899,762, an increase of 7.2 per cent. Railroads in the Southern district for March had a net of $5,878,806, compared with $8,137,274 in March, 1934.

Railroads in the Western district for three months in 1935 had a net of $5,458,797, at the rate of 0.31 per cent. For the same three months in 1934, they had a net of $19,065,609, at the rate of 1.06 per cent. Operating revenues in the Western district for three months amounted to $269,232,020, an increase of 1.1 per cent above the same period in 1934, while operating expenses totaled $229,013,266, an increase of 8.6 per cent. For March the railroads in the Western district reported a net of $5,598,189, compared with $10,733,841 for the same roads in March, 1934.

CLASS I RAILROADS—UNITED STATES

	1935	1934	Per cent
Month of March			
Total operating revenues	$280,898,558	$293,200,602	4.2 Dec.
Total operating expenses	213,278,032	209,270,377	1.9 Inc.
Taxes	20,203,275	21,467,164	5.9 Dec.
Net railway operating income	37,850,965	52,217,083	27.5 Dec.
Operating ratio—per cent	75.93	71.37	
Rate of return on property investment	1.89%	2.60%	
Three months ended March 31			
Total operating revenues	$800,057,121	$799,672,358	—
Total operating expenses	626,358,362	593,742,384	5.5 Inc.
Taxes	60,028,778	62,537,112	4.0 Dec.
Net railway operating income	84,773,560	112,696,133	24.8 Dec.
Operating ratio—per cent	78.29	74.25	
Rate of return on property investment	1.69%	2.24%	

P. & S. Division Meeting July 23 and 24 in Chicago

At a meeting of the General Committee of the Purchases & Stores Division, Association of American Railroads, in Chicago on May 9 it was decided to hold an annual meeting of the Division on July 23 and 24 at Chicago in a hotel to be determined by a later decision.

Regulation of All Transport Favored by U. S. Chamber

Would, however, leave the states with control over highway standards and vehicle sizes

Resolutions favoring legislation for the federal regulation of all forms of interstate transportation were adopted by the Chamber of Commerce of the United States at its annual meeting in Washington, D. C., on May 2. The same resolutions opposed the idea of continuing the office of transportation co-ordinator with power to issue orders and held that action on the recommendations of the co-ordinator should be left to the railroads. The convention also adopted another resolution providing that the determination of the standards for highway construction and the size and weight of motor vehicles operating over them should be left to the several states in accordance with their respective situations and problems. This position was taken on a resolution offered by Fitzgerald Hall, president of the Nashville, Chattanooga & St. Louis, as a substitute for one based on the report of the committee on standards for highway vehicles, which had recommended a set of maximum standards for weight and dimensions of motor vehicles based on those recommended by the American Association of State Highway Officials. A minority report, signed by J. J. Pelley, president of the Association of American Railroads, and L. O. Head, president of the Railway Express Agency, Inc., had taken the position that motor vehicles should be adjusted to such highways as each state finds itself capable of building and safe operations require, and the latter view prevailed in the convention.

The resolution as to regulation follows:

"The public interest as well as that of the various carriers concerned calls for establishment of federal regulation of all forms of interstate transportation without further delay. Action with regard to one form of transportation should not, however, necessarily await action with respect to other forms. The desired results can best be obtained by separate measures for rail, bus, truck, water, and air transportation.

"Co-ordination of these different forms of transportation is essential. To effect this, all federal regulation of rates and service should be administered by the Interstate Commerce Commission. A temporary exception should be made in the case of aviation, which can best be dealt with

(*Continued on page 754*)

Object to Governmental Interference in Business

Business papers take strong stand in unanimous resolution adopted on the subject

The Associated Business Papers, Inc., a national association of publishers of the leading business and technical papers, at the close of its Eleventh Annual Spring Conference, held at Hot Springs, Va., May 3-5, unanimously adopted the following resolution:

As close and continuous observers of American industry and trade, the business press is convinced that the well-being and prosperity of our people must depend, in the long run, upon the maintenance of constantly increasing efficiency of production and distribution. Only in this way can high standards of living for the American consumer be maintained.

To realize this objective it is essential that the development of new methods and processes for the manufacture of goods required by the consumer, together with the promotion of efficiency in distribution and merchandising, be stimulated in every legitimate way. The chief motivation of this development always has been, and we believe must continue to be, the incentive offered by the profit system. So long as the competent and the enterprising can anticipate rewards proportionate to the skill and energy expended, this progress, benefiting industry and the public alike, will continue.

Therefore, any tendency on the part of government to interfere with this vital process we believe is against public interest. Under the stress of emergency many measures have been adopted for the control of industry and trade which seem to us to be inconsistent with the tested principles which have been responsible for national progress and the well-being of the individual citizen in every walk of life. Whatever merit these measures may have, as expedients designed solely to meet the exigencies of a national crisis, it is manifest that they cannot be continued indefinitely without crippling the industrial structure, dislocating and unbalancing the national economy, and reducing the opportunities of the individual business man, worker and consumer.

We urge, therefore, that government discontinue, at the earliest possible moment, all those temporary measures which have been found to interfere with the normal and healthy processes of American business, or which are not in keeping with traditional American policies of individual progress through competitive merit, or of progressively higher standards of living for the people as a whole through continued increases in productive efficiency.

At the same time we recognize the right and duty of government to adopt those measures which are necessary for the protection of legitimate business and all other citizens from the exploitation of predatory interests, whether these be in the ranks of industry, finance or labor. We recognize the necessity of protecting the public from natural monopoly or monopolistic practices affecting production, rates, prices and wages. Industries which are naturally competitive should not be allowed to engage in monopoly practices without government regulation. We therefore urge that, to whatever extent industry opposes government regimentation, it shall as a matter of consistency and sound economics accept the principle and carry out the practice of free competition in the public interest.

We are opposed to government operation of business enterprises and competition with its own citizens.

We are opposed to government ownership and operation of railways.

We believe the restriction of free enterprise and competition through a system of government licensing of processors, as proposed in amendments to the Agricultural Adjustment Act, to be inconsistent with the interests of agriculture, business and the public.

We urge the elimination at the earliest possible moment of all artificial brakes upon freedom of individual initiative and enterprise, because we believe that through them alone employment can be expanded, and normal incentives for business development and capital investment provided.

The "400" Carried 38,078 Passengers

The "400" of the Chicago & North Western, operating between Chicago and the Twin Cities, carried a total of 38,078 passengers from January 2 to April 30, four months. The average during this period is 157 revenue passengers per trip northbound and 163 per trip southbound.

Life Term for Train Wrecker

Hubert Lindsey, six-term former convict, was convicted on May 4 at Columbus, Ohio, of first degree murder on a charge of deliberately wrecking a Pennsylvania passenger train on December 27, killing three persons and injuring 16. The train, running from Columbus, Ohio, to Cleveland, struck an open switch and ran into a string of box cars.

New Train, New York-Birmingham

The Seaboard Air Line's new time table shows the "Robert E. Lee," a new train, leaving New York over the Pennsylvania at 5:30 p.m. daily, which makes the time to Birmingham, Ala., via Atlanta, in 27¼ hours, or six hours better than any previous schedule over this route, and four hours better to New Orleans and Memphis. Northbound the time is 28 hours, or 3½ hours faster than any previous schedule.

C. & N. W. Traffic Club Formed

Employees of the Chicago & North Western have organized the North Western Traffic Club of Chicago, as a means of acquainting employees with the duties of the various departments so that a better insight into all phases of traffic work may be obtained by each employee. Committees study present-day traffic problems, railroad legislation and competitive transportation. The officers are: General chairman, A. H. Mallgren; vice-chairman, W. W. Spangler; second vice-chairman, F. H. Tribbey; secretary, M. N. Vienne; and treasurer, W. W. Brown.

Debate on Rail Merger Continues in Dominion

Manion poses 12 questions to merger advocates—Beatty defends unification

The debate over the question of amalgamation of Canada's two principal railways was given another impetus last week when President E. W. Beatty, of the Canadian Pacific, in his annual address to the shareholders of that road in Montreal again declared that amalgamation under private ownership was the only way out, while the Minister of Railways, Hon. Robert Manion, addressing a meeting in Toronto, once more asserted that amalgamation under either public or private ownership would not solve the problem, which is one of the most pressing confronting the Canadian people.

If conditions improved and gross earnings increased to a point touched in 1929 and 1930, Dr. Manion asserted, the C.N.R. could pay close to the total interest obligations from its net revenues, and the balance could be easily absorbed. This would be possible through stringent economies put into effect since the advent of the depression.

Economies proposed by champions of amalgamation he enumerated as abandonment of 5,000 miles of railway—two-thirds of which would be C.N.R. lines; closing of terminals; shutting down shops and abandonment of towns now serviced by the railways. These "so-called economies," he claimed, would not reduce the interest burden on the system. They would leave entire towns "abandoned to the wolves and would throw thousands of workers out of employment and entitled to compensation."

Further amalgamation would set up "the biggest monopoly Canada has ever known." It would create a voting body of great influence. Dr. Manion directed at proponents of amalgamation 12 questions which, he said, had never yet been answered.

1. Are the amalgamated railways to be under private or under government control?

2. How much saving can be made by amalgamation under present traffic conditions?

3. If by amalgamation savings are made, in what proportions are these savings to be divided between the Canadian National and the Canadian Pacific?

4. How much capital expenditure will be necessary to effect the physical union of the two railways?

5. How much of the present deficit of $50,000,000 is the C.P.R. ready to absorb if the C.N.R. is taken over by the other railway?

6. If the C.P.R. is brought under government ownership are the bondholders of the C.P.R. to be guaranteed their interest and would the holders of common stock expect guaranteed dividends?

7. Would the Canadian Pacific put in all its assets or only part of them?

8. What is to be done about settlers and industries and towns and terminals on lines to be abandoned?

9. Are those affected by closing of

shops, terminals, etc., to be compensated?

10. What provision is proposed to provide for these displaced wage-earners until they can be absorbed in other industries?

11. Should these questions be answered, or are we to decide on amalgamation first and get our answers after?

12. Is this the time—near the bottom of the financial crisis—for final decision on this question?

"Your directors," Mr. Beatty told the C.P.R. shareholders, "have used all means within their power to improve the financial position of the Dominion and the company through measures of co-operation with the Canadian National. Although we are convinced that the plan of co-operation has its obvious limitations, which make it an inadequate solution for the pressing financial drain on the public exchequer, we shall continue to co-operate until a more effective plan has been adopted.

"In addition to the economies which have been put into effect, your officers have urged the adoption of plans for unifying the operation of the express and telegraph facilities of the two systems, for the common use of the best passenger terminals at Montreal to facilitate further pooling in the interest of maximum convenience to the public and maximum economy to the railways and for the pooling of the Montreal suburban passenger services. Your directors are prepared to conclude agreements in respect to all of these projects on a basis which will equitably divide the burden and advantage between the two companies.

"Only in one instance, as the trustees of the Canadian National record, has this company been unable so far to agree to proposals they have urged. This was in respect to the pooling of passenger traffic West of Toronto, which, as proposed, would have involved severing a long established and valuable traffic connection with an important American railroad.

"Experience with co-operation strengthens the view that unification alone offers an adequate solution to the Canadian railway problem. No other plan can eliminate the tremendous waste caused by maintaining duplicate services in a country which can no longer afford to pay for this duplication. Unification would also offer a solution to the unfair and dangerous anomaly of a government-owned enterprise engaging in direct competition with private capital."

More Travelers Ship Their Automobiles

An increase of over 60 per cent in the number of automobiles shipped to and from Florida points this season, as compared with the winter of 1933-1934, has been experienced by the Illinois Central. Under the present arrangement an automobile is carried for 3.6 cents a mile when two first-class tickets are purchased for passengers.

Crossing Work Under New York Labor Law

The Governor of New York has approved, as chapter 728 of the laws of 1935, an amendment to the Labor law as it relates to grade crossing elimination work. Future contracts for work on grade crossing elimination must contain a provision for the eight-hour day and the five-day week, and employees must be paid the prevailing rate of wages. Also this class of work must conform to section 221 of the Labor law regulating the operation of company stores, and section 222 giving preference in employment to citizens of the state.

P. R. R. Places First Streamlined GG-1 Locomotive in Service

The first of the Pennsylvania's 57 GG-1 type streamlined electric locomotives was placed in service on the New York-Washington route on May 2. These new locomotives duplicate the original GG-1 in all working parts, but the cab has been redesigned and its plates electrically welded in order to produce a seamless, streamlined unit with a smooth, unbroken surface.

These new locomotives of the GG-1 type are designed to handle passenger trains at speeds of over 100 m.p.h. and as received they will replace in passenger service the non-streamlined electrics hitherto used. The latter, after minor electrical alterations, will be transferred to the freight service.

Demurrage on New York Piers

Under a law passed in New York and approved by the Governor on May 4, New York co-operates with New Jersey in empowering the Port Authority to regulate the storage of freight by ocean carriers on public piers in the port of New York; the amount of free time to be allowed and the just and reasonable rates to be charged for holding or storing freight are to be made such as to relieve congestion and eliminate fire hazards. The nature of commodities, the influence of competing ports, etc., must be considered; varying periods of time and varying minimum rates may be prescribed.

For the cost of administering the regulations, owners of vessels must pay $15 a month for each vessel entering the port in that month and discharging any freight at any public pier.

Twin Zephyrs' Supplementary Run Is Popular

A supplementary trip made by the Twin Zephyrs of the Chicago, Burlington & Quincy from Chicago to Aurora, Ill., during the layover at Chicago between 7 p. m. and 2 p. m. the next day, has proved so popular that the 88 seats in the train have been sold out days in advance, since the run was established on April 22. Six days before (April 16) the trains were run several trips in revenue service from Chicago to Aurora in order to give as many people in Chicago as possible an opportunity to use the trains; and the success of the trips on this day, when they were patronized by 1,144 persons, resulted in the establishment of the regular daily round trip. While under the original plans the excursions would continue to May 25, it is probable that they will be extended during the summer. On these trips the train leaves Chicago at 11 a. m. and returns at 12 noon, 45 min. being consumed in the run and 15 min. in turning around at Aurora. On April 28, all seats were sold for the following week. Several parties have reserved the trains on various days and on these occasions as many as 94 persons have been aboard.

U. P. M-10001 Named City of Portland

The Union Pacific has named its high-speed streamlined, seven-car train, which it will place in service between Chicago and Portland, Oregon, on a 40-hr. schedule, the "City of Portland." Being a train for through business, assignment of sleeping accommodations in the three Pullman cars will be controlled at Chicago and Portland and reservations for local passengers from these terminals will not be sold until the day of departure. Regular first-class and coach tickets and low-rate short-limit and summer tourist tickets will be honored on the train. For the present, railroad passes and special tickets will not be valid. Regular standard lower berth, upper berth, single-occupancy section, compartment and bedroom rates without surcharge will apply.

Signal Night for New York Railroad Club

Four illustrated talks on railroad rapid transit and highway traffic signals will be given at the meeting of New York Railroad Club, Friday evening, May 17. A. Holley Rudd, chief signal engineer, Pennsylvania Railroad, will preside and will also tell about evolution of cab signals on his road. Robert C. Johnson, engineer maintenance of way, Board of Transportation, City of New York, will describe the signal system of the Independent Subway and compare it with railroad signal systems. Robert B. Ellsworth, assistant signal engineer, New York Central Lines, will describe the signal system recently installed in the electric zone of the Central and tell how it has speeded up operation. Ralph A. Reed, designing engineer, General Electric Company, will describe latest developments in highway traffic signals and report on progress of standardization in traffic control throughout the United States. The Keystone Quartette of the Pennsylvania Railroad will give several numbers, and community singing will be led by Fred Bender, signal engineer, Central of New Jersey.

Distributions by Railroad Credit Corporation

Nearly one-third of the net emergency freight revenues collected by the Railroad Credit Corporation has been returned to participating carriers through liquidating distributions since termination of its lending period on June 1, 1933, according to a report filed by the corporation with the Interstate Commerce Commission. Sixteen distributions, aggregating $22,812,439, or 31 per cent of the net contributed fund as of March 31, 1935, have been made. Of this amount, $10,145,863 has been made in cash and $12,666,576 in credits on debts due the corporation. The last distribution was on April 30, at which time $732,703,

or one per cent, was repaid to participating carriers. Cash receipts in April totaled $295,630, of which $224,717 was in reduction of loans and $70,340 was interest on loans.

E. H. Harriman Memorial Medal Awards

The American Museum of Safety, in a letter sent to Class I railroads, has announced plans for the E. H. Harriman Memorial Medal Awards to cover the year 1934. The awards and regulations governing them are the same as in previous years and thus three medals—gold, silver and bronze—will again be awarded to three Class I railroads. The gold medal is awarded to the winning railroad in Group A, including those operating 10,000,000 or more locomotive miles per year; the silver medal to the winning railroad in Group B, including those operating between 1,000,000 and 10,000,000 locomotive miles per year; and the bronze medal for Group C, including roads operating less than 1,000,000 locomotive miles per year.

B. & O. Trains Expedited

The Baltimore & Ohio, "in line with the general trend to shorten train schedules," has reduced the running time of nearly all of its important trains in both directions between New York and Philadelphia, Pa., Baltimore, Md., Washington, D. C., and the west. Under the new schedules, which became effective on April 28, the Capitol Limited, New York-Chicago train, has been expedited by 41 min. eastbound and 31 min. westbound. Also, the New York-St. Louis running time of the National Limited has been cut by 27 min. This train on April 26 celebrated the tenth anniversary of its inauguration, in which connection it was pointed out that an on-time record of 96 per cent has been attained during the decade.

The New York-Washington service has also been expedited with the inauguration of a four-hour schedule for the Columbian, which operates in both directions between those cities.

Work Relief Organization Set Up

President Roosevelt on May 6 issued an executive order establishing the Division of Applications and Information, the Advisory Committee on Allotments, and the Works Progress Administration to administer the $4,000,000,000 work-relief fund recently appropriated by Congress. He also appointed members of the committee on allotments, including Thomas H. MacDonald, chief of the Bureau of Public Roads, which is to be particularly concerned with the expenditure of the $800,000,000 allotted in the act for highways and grade crossing elimination.

The Committee on Allotments, at its first meeting on Tuesday, made a preliminary allotment of $2,000,000,000 of the work-relief fund to the eight classes provided for in the law, subject to final approval by the President. This preliminary allotment allows $400,000,000 for highways, roads, streets, and grade crossings, without segregation of the latter item, out of the $800,000,000 allowed by the law for such items. A more detailed segregation may be made at the next meeting of the committee next Monday. No allotments have yet been made for specific projects.

The President said at a recent press conference that the allotment of funds for grade-crossing elimination and highway work would be somewhat complicated by the provision in the law requiring that money for these purposes be apportioned to the states on the basis of formulas. For grade crossings the formula takes into consideration the population, road mileage, and railroad mileage in each state, without relation to the number of unemployed persons on relief in each state, which is supposed to be the general basis for allotment of funds.

American Transit Association Forms Bus Division

The executive committee of the American Transit Association, at a meeting in Washington, D. C., on April 30, approved the recommendation of its special committee on organization of a bus division and formally established such a division. It is to be known as the American Transit Association Bus Division.

In its report the special committee said it had reached the conclusion that a bus division should be organized "in order that more adequate consideration may be given to the problems involved in the operation and maintenance of motor vehicles used in urban transportation service. At the present time approximately 20 per cent of all transit passengers in the United States are carried on buses." The committee was further of the opinion that "the activities of the Bus Division should be confined solely to urban and suburban bus operation and to such problems of inter-city operation as do not involve interstate commerce, except perhaps in the larger metropolitan areas. Activities directly duplicating or conflicting with those of the National Association of Motor Bus Operators are not contemplated."

The American Transit Association will hold its next convention at Atlantic City, N. J., during the week of September 23, according to an announcement issued on May 1.

115 Railroad "Fans" Inspect Harmon Shops of New York Central

A party of 115 railroad "fans" took advantage of the New York Central's invitation to visit its shops and other facilities at Harmon, N. Y., on April 27. Included in the group were delegations from the Railway & Locomotive Historical Society and the National Association of Railroad Enthusiasts, as well as others interested in railroad transportation.

The group traveled from New York in special coaches which were switched out at Harmon; a special round-trip fare was authorized for the party.

Two hours were spent in inspecting the shops, equipment, towers and main line operations. Superintendent of Electric Equipment A. J. Clarkson and Assistant Master Mechanic F. J. Fahey, Trainmaster William Weaver and Assistant Advertising Manager William T. Gaynor of the New York Central acted as hosts to the party. The supervisory forces of the shops generously acted as guides, a foreman or supervisor being assigned to every 10 or 12 visitors.

One of the New York Central's Hudson type locomotives was placed in a special location for inspection by the members, and in order that photographs might be made.

Co-ordinator Eastman On Water Transportation

Co-ordinator Eastman addressed the annual convention of the National Rivers and Harbors Congress at Washington on May 2 on the need for regulation of water transportation by the Interstate Commerce Commission, saying that "if we are to be fair, the alternatives are either to regulate every important form of transportation effectively and impartially or else to untie the hands of the railroads, at least to some considerable extent." He added that "the highway motor carriers and the water lines have much to fear, as I believe they realize, if railroad competition is unleashed."

"Under certain conditions," Mr. Eastman said, "carriage by water is undoubtedly the cheapest and most economically efficient form of transportation that we have. Illustrations are the operations of the cargo boats on the Great Lakes which carry ore, coal and grain, and the operations of many other cargo boats, such as tankers, in the coastwise and intercoastal trades. But of course water transportation is carried on under many widely differing conditions, and its costs cover an equally wide range. This is especially true if the costs incurred by the government, in both the construction and the maintenance of waterways, are taken into consideration.

"That such governmental costs should be taken into consideration in appraising the economic status of water transportation is hardly open to question. They are actual costs—there is nothing theoretical about them, and they must be borne by some one. I refer, of course, only to the costs for which the water transportation may fairly be held responsible, and not to the costs which would be incurred, regardless of transportation, for such purposes as flood control or the conservation of water for power purposes. But if water transportation can only be secured by the construction of artificial channels and the use of dams and locks and if it requires continual dredging or other maintenance expense, surely such expenditures by the government must be weighed in the balance in determining whether or not particular projects are economically sound and in the general public interest.

"I venture to guess that few will dispute this proposition purely as a matter of theory. Such controversies as may arise will center around its practical application. All that I am now suggesting is that this matter ought not to be overlooked, but that on the contrary it merits the most careful study and research. Those who are genuinely interested in the welfare of water transportation or rail transportation or highway transportation or any other form of transportation will, I am sure, wish to avoid any developments which can

not stand the acid test of economic soundness, for such developments in the end will discredit the cause for which they are working and create reactions which will do it harm. The same may be said of unwise and unwarranted harbor expenditures, for while every community which is located on or near navigable water has the ambition to become a great port, many are called, or think that they are called, but few are chosen."

Transportation Legislation In Congress

President Roosevelt said on Wednesday that he hoped to send his transportation message to Congress this week.

Hearings on the Eastman bill to provide for regulation of water transportation were begun on May 7 before the House committee on merchant marine, with Co-ordinator Eastman and Commissioner McManamy of the Interstate Commerce Commission as the first witnesses in support of the bill. The committee is in the midst of a hearing, which had been going on for several days and is to be continued, on the ship subsidy bill, which sets up a new commission to regulate ocean transportation as well as to administer the proposed subsidies, and many of the questions asked by members of the committee had to do with the relative merits of the two bills. Mr. Eastman said he had made no comprehensive investigation of ocean shipping in foreign service, but had confined his studies mainly to domestic water transportation and that the provisions in the bill relating to foreign shipping had been inserted almost at the last minute because of the feeling expressed by the Shipping Board Bureau and others that domestic and foreign shipping should be under the jurisdiction of one agency. In reply to some questions as to the feasibility of regulating rates in foreign trade he said he had proposed no new regulation, but had merely undertaken to transfer to the Interstate Commerce Commission the regulatory functions now imposed by existing law on the Shipping Board Bureau, with some perfecting amendments. He had also proposed some amendments to his original bill as a result of testimony before the Senate committee.

The Huddleston sub-committee of the House committee on interstate and foreign commerce, which has been considering the Eastman motor carrier bill for several weeks, met again on May 7, but reached no conclusion. In an address before the Associated Traffic Clubs on May 7 Chairman Rayburn, of the House committee, predicted passage of the motor carrier bill and the bill to amend the fourth section at this session of Congress.

The legislative committee of the American Trucking Associations has sent a letter to members of the House committee expressing general approval of the motor carrier bill as passed by the Senate with certain changes. It said the demand for regulation is being urged by shippers who desire known and dependable delivery charges and by the trucking industry "which desires stabilization," and that the demand appears to be generally met by the Senate bill with two exceptions. These are the failure to retain the organization of the industry under its code as a necessary part of the administration and the failure to provide for a separate division of the Interstate Commerce Commission. These two defects, the committee said, would in a measure be met by the reorganization bill, but could probably be acceptably met by amendment to the motor carrier bill.

Almost every Senator and Congressman in Washington was visited last week by state legislative representatives of the Brotherhood of Locomotive Firemen and Enginemen and urged to support the bills endorsed by the railroad labor organizations, according to their publication "Labor," which reported the biennial convention of the brotherhood's National Association of Legislative Boards. Timothy Shea, assistant president of the brotherhood, was quoted as saying that "practically every delegate came back from Capitol Hill with a report that he had received a sympathetic hearing." The same article referred to the activities of the "railroad owner's lobby," but did not use the word "lobby" in connection with its account of the brotherhood activities.

The Senate committee on May 7 favorably reported to the Senate the bill, H.R. 4751, passed by the House, to provide that members of the Interstate Commerce Commission whose terms expire shall continue to hold office until their successors are appointed.

Senate Committee Favors Extension of Co-ordinator Law

The Senate committee on interstate commerce on May 7 favorably reported to the Senate the Wheeler resolution to extend for one more year Title I of the emergency transportation act, 1933, which contains the provisions under which Co-ordinator Eastman functions and also the restrictions against reduction in railroad employment. A similar resolution is pending in the House, introduced by Representative Crosser at the request of the railroad labor organizations. The Senate committee report says it does not appear that permanent legislation will be enacted before June 17, when the emergency act expires, such as that recommended by Mr. Eastman to reorganize the Interstate Commerce Commission and make the office of co-ordinator a permanent one, and that the resolution is designed to insure that there will be no lapsing of the office. It also refers to the labor restrictions in Section 7(b) as representing one very important object of the law.

"The necessity for the Emergency Transportation Act, 1933," the report says, "was found in the desperate financial condition of the railroads, in the state of chaos existing in the field of transportation generally, and in the fact that more than 750,000 railroad employees had been dropped from pay rolls between the beginning of the depression and the date of its enactment. The financial condition of the railroads has not shown material improvement owing to several causes, including loss of traffic resulting from the depression and from the competition of other forms of transportation, and in general their net income continues around 50 per cent of that earned for the period 1923-25.

"Studies made by the Co-ordinator and his staff reveal large savings as possible to be realized by the railroads should their recommendations be adopted. While other studies of importance are approaching completion, there are negotiations for the adoption of their recommendations to be carried on, and such important studies as those involving, for example, terminal allowances, carload traffic, and labor relations cannot be completed before June 17, 1935.

Conditions in the field of transportation generally have been and are chaotic. The need for regulation of all forms of transport has been the subject of three of the Co-ordinator's reports to the Congress. While as a result of the last of these reports there were introduced in this session of Congress a series of bills to provide regulation of the various forms of transportation hitherto unregulated, only one of them has passed the Senate.

"Another bill provides for a permanent co-ordinator to study the problems of the transportation industry with the view to the prevention of its perennial evils rather than to deal with them after they have developed. The bill including this suggestion as one of its objects has been introduced in both houses of this Congress (S. 1635 and H. R. 5365), but it does not appear that such permanent legislation will be enacted before June 17, 1935. Hence, this joint resolution is designed to insure that there will be no lapsing of the present act or the office of Co-ordinator pending determination of the question of whether such a bill shall be enacted as a permanent part of the law of the land.

"One very important object of title I of the Emergency Act is to insure that the burden of co-ordination projects should not be borne in full by railroad labor while the benefits of such projects were reaped in full by the railroad companies. To that end section 7 (b) of the act provides that the number of employees in the service of a carrier shall not be reduced by reason of action under title I below the number in service in May 1933, except that vacancies in the rolls of employees because of death, retirement, or resignation need not be filled to the limit of 5 per cent of May 1933 total in any one year. This establishes a limit of about 10,000 men a year only who can be displaced without replacement.

"The Co-ordinator alone has been charged with the duty of studying and negotiating the problem of such labor relations. The Supreme Court's decision on May 6 in respect of the constitutionality of the Railroad Retirement Act has rendered imperative further study and negotiation by the Co-ordinator, in the field of labor relations.

The staff of the Co-ordinator, other than as drawn from the Interstate Commerce Commission, which is required to afford the Co-ordinator such assistance as he needs and it can furnish, is supported by assessment on the railroads. The present rate of the assessment is $2 per mile, and this rate is continued in the joint resolution reported herewith.

"The joint resolution, as originally in-

troduced, called for an extension of 1 year but with a right in the President to extend it by Executive order for a second year or any part thereof. The amendments adopted by the committee eliminated this right of the President to make further extension of title I, which is to be extended only to June 17, 1936."

Regulation of All Transport Favored by U. S. Chamber

(*Continued from page 749*)

for the present by a special aviation commission, with provision for ultimately transferring jurisdiction to the Interstate Commerce Commission.

"To facilitate performance of its enlarged duties the commission should be required by law to set up separate divisions for the principal branches of transportation, but permitted to work out the details itself. The commission's activities should not invade the field of management. The Federal Co-ordinator of Transportation under the emergency legislation has made valuable studies and recommendations for railroad operating economies. Action upon them should be left to the railroads through the newly organized Association of American Railroads.

"These principles we advocate because of their obvious equity and their clear advantage in the public interest. Neglect of these principles, or lack in their proper application, will undoubtedly cause suggestion of government ownership of railroads, in the first instance, and then of other forms of transportation. We believe that any form of government ownership or operation of railroads would result in the creation of politically-controlled bureaus, in such extravagance in operation, and in such lack of needed services that the development of an adequate national transportation system would be impeded and the result would be not only a greater burden upon the shipping public and the country at large, but great damage to industry as a whole."

Another resolution on "highway planning" is as follows:

"The problem of modern highway taxation and engineering planning has become so complex that a superficial determination of highway policies may result in serious inequity and loss of transportation efficiency. Policies in highway taxation and highway improvement can only be determined after a consideration of the fundamental facts involved as developed by traffic, road-use and economic surveys.

"We therefore recommend to federal and state agencies that traffic, road-use, and economic surveys be made with all possible dispatch. Based upon such surveys there should be developed for each state a rational highway plan embodying the needed and logical improvements on the several classes of rural highways and city streets in the order of their relative importance, and setting out the appropriate annual highway income necessary to execute the plan, and to provide an equitable distribution of highway funds."

Construction

DELAWARE & HUDSON.—An amendment to the order providing for the elimination of the East Main street crossing of this road in the village of Cobleskill, N. Y., has been made by the New York Public Service Commission to provide for the construction of an underpass 500 ft. west of the present crossing. The estimates show highway betterments amounting to $7,700 chargeable to the Department of Public Works and railroad betterments amounting to $44,000 chargeable to the railroad company.

DELAWARE & HUDSON.—The New York Public Service Commission has reopened proceedings for the elimination of the grade crossings of this road in Saratoga Springs, N. Y., and Ballston Spa. A hearing will be held at Ballston Spa on May 22 to consider a new plan for the elimination of the crossings. The proceedings involve the proposed elimination of some 30 crossings in Saratoga Springs, about 15 crossings in Ballston Spa, as well as other crossings outside the city and village in the towns of Wilton, Northumberland and Moreau in Saratoga county.

KANSAS CITY SOUTHERN.—A contract has been awarded to the Patti Construction Company, Kansas City, Mo., for the construction of a headhouse at this company's grain elevator in Kansas City, to replace the headhouse that was destroyed by fire in January. A contract for the furnishing and installation of machinery and equipment for the headhouse has been awarded to the Webster Manufacturing Company. The new headhouse, which will be 33 ft. by 53 ft. in plan and 195 ft. high, will be of reinforced concrete construction. The work will include also the construction of a three-track loading and unloading shed and a grain drier. All excavation work and the installation of foundation piling for the new structure have been completed.

LEHIGH VALLEY.—The New York Public Service Commission, which has directed the construction of a subway, at an estimated cost of $86,400, exclusive of property damage, for the elimination of the Lake street crossing of this road in the village of Burdett, N. Y., will hold a hearing at Albany on June 7, to consider a petition of this road asking that the operation of the order for the elimination of the crossing be postponed.

MAINE CENTRAL.—The Milliken grade crossing at Hallowell, Maine, on this road, is to be eliminated; an overhead highway bridge will be constructed at a cost of $128,224 to be paid entirely from federal funds.

NEW YORK CENTRAL.—An application of this road for a rehearing in the proceeding for the elimination of the Verona station crossing of the railroad in the town of Verona, N. Y., has been denied by the New York Public Service Commission. See *Railway Age* March 23, page 478.

The commission also denied a petition of this road for a reopening of the proceeding for the elimination of the Carey road crossing in the town of Whitesboro, N. Y. The estimated cost of this elimination, which calls for a bridge to span four tracks, is $172,900.

PENNSYLVANIA.—Bids have been invited by the United States Engineer office, Zanesville, Ohio, for the relocation of 3.37 miles of the Pennsylvania's line in the vicinity of the Wills Creek reservoir in Ohio.

STATEN ISLAND RAPID TRANSIT RAILWAY COMPANY.—This company, a subsidiary of the Baltimore & Ohio, is receiving bids until 1 p. m. Eastern Standard Time May 22, at the office of the chief engineer, Baltimore & Ohio Central building, Baltimore, Md., for grading, construction of bridges, etc., in connection with the elimination of grade crossings, Port Richmond-Tower Hill, Staten Island, N. Y.

WABASH.—The Inland Construction Company and Harry A. Henske, with a joint bid of $150,681.50, were the low bidders for contract No. 2 in the construction of this company's new bridge across the Missouri river at St. Charles, Mo. The work involved in this contract includes the construction of the east abutment, 77 bents of two pedestals each for the east approach, 41 bents of two pedestals each for the west approach, and the west abutment. Bids for the construction of the superstructure of this bridge will be received about June 6.

Equipment and Supplies

LOCOMOTIVES

THE CHICAGO & ILLINOIS WESTERN has ordered one 600-hp. 100-ton Diesel electric switching locomotive from the American Locomotive Company.

IRON AND STEEL

THE CHICAGO & NORTH WESTERN has ordered 125 tons of structural steel for a bridge at Fond du Lac, Wis., from the McClintic-Marshall Corporation.

THE ERIE has ordered 16,880 tons of rails placing 9,900 tons of 131-lb. rail with the Carnegie Steel Company, 3,280 tons of 112-lb. rail with the Illinois Steel Company, 1,100 tons of 112-lb. rail with the Inland Steel Company, and 2,600 tons of 112-lb. rail with the Bethlehem Steel Company.

SIGNALING

DELAWARE RIVER JOINT COMMISSION.—The Delaware River Joint Commission, Joseph K. Costello, secretary, Camden,

Continued on next left-hand page

HIGH-SPEED PASSENGER TRANSPORTATION

Schedule performance on several large railways show that steam locomotives and standard types of equipment best meet the problem of high as well as moderate speed passenger transportation.

Transportation by steam combines high speed with maximum safety of passengers and train crew, comforts and convenience of the most modern passenger equipment.

The superiority of steam as demonstrated in this country is paralleled by the experience abroad, where railways are turning from small light-weight internal-combustion trains back to steam locomotives and standard types of passenger equipment.

Steam is the cheapest, most reliable, and safest form of passenger transportation.

LIMA LOCOMOTIVE WORKS INCORPORATED

LIMA LOCOMOTIVE WORKS, INCORPORATED

LIMA OHIO

N. J., has called for bids up to May 17 for furnishing and installing block signaling and interlocking equipment for the high-speed railroad line across the Delaware River bridge from Eighth and Race Streets, Philadelphia, to Haddon Avenue and Carman Street, Camden.

Supply Trade

The Sullivan Machinery Company has moved its general offices from the Wrigley building, 400 North Michigan avenue, to the Bell building, 307 North Michigan avenue, Chicago.

T. A. Canty, distributor of supplies manufactured by **The Lincoln Electric Company,** Cleveland, Ohio, has moved his headquarters from 116 East Centre street to larger quarters at 1023 Cathedral street, Baltimore, Md.

Horace M. Wigney, vice-president and general manager of **Safety Refrigeration, Inc.,** on May 16 will move his office from 230 Park avenue, New York, to 80 East Jackson boulevard, Chicago. The office of **J. H. Michaeli,** assistant general manager, will remain as at present in New Haven, Conn.

The Philadelphia, Pa., district sales office of the **Republic Steel Corporation,** and subsidiaries, the **Berger Manufacturing Company** and the **Union Drawn Steel Company,** will be moved on May 18, from the Fidelity-Philadelphia Trust building to the Broad Street Station building, 1617 Pennsylvania boulevard. **J. B. DeWolf** continues in charge of the office as district sales manager, assisted by the present staff.

Dr. John Chipman has joined the research staff of **The American Rolling Mill Company,** Middletown, Ohio, as associate director of the research laboratories. He will be responsible for research activities in the field of melting and refining metals. For six years he was research engineer in the Department of Engineering Research at the University of Michigan. For several months he has been devoting part time to Armco's research laboratories, but will now give all his time to his new responsibilities.

Merger of the **Republic Steel Corporation** and the **Corrigan McKinney Steel Company** was given the approval of the federal district court at Cleveland, Ohio, on May 3, when Judge Frederick M. Raymond ruled against the government in its suit to block the amalgamation. In the court's opinion, the merger would not be in violation of the Clayton anti-trust act as charged by government attorneys. Likewise the government had failed to furnish sufficient proof that the merger would cause any substantial lessening of competition or would result in any probable injury to the public.

J. E. Holveck has been appointed special sales engineer of the **Worthington Pump & Machinery Corporation,** Harrison, N. J., operating from its Pittsburgh, Pa., office, but extending his activities also to the territories of the Cleveland, Ohio, Detroit, Mich., Chicago and Buffalo, N. Y., offices. Mr. Holveck was formerly a member of the engineering staff of Worthington's Holyoke works and later was associated with The Aldrich Pump Company as sales engineer in its Pittsburgh and middle west districts. He has been responsible for many developments in pumping equipment and hydraulic accessories.

Harry F. Boe who has been manager of the Buffalo office of the **Westinghouse Electric & Manufacturing Company** since 1926, has been appointed assistant manager of the Eastern district with headquarters at New York City. Mr. Boe was born in Mansfield, Ohio, and entered the service of the Westinghouse Company in 1900 in its winding department and later was transferred to inspection work, subsequently serving in the engineering department and later as engineer to the sales department. In 1916 he became manager of the Vaile Kimes Pump Company, Dayton, Ohio, and two years later returned to the Westinghouse Company at Rochester, N. Y. After four years at Rochester he became manager of the industrial division for the Buffalo district and in 1926 was made manager of the territory.

OBITUARY

E. M. Adams, first vice-president of the Inland Steel Company, Chicago, died on May 8 at Hot Springs, Ark., of heart failure.

George F. Jones, for 32 years southern representative for The Baldwin Locomotive Works, died at his home in Richmond, Va., on April 26, at the age of 86 years. Mr. Jones had been on the retired list since January, 1929.

Tracy Lyon, formerly assistant to president of the Westinghouse Electric & Manufacturing Company, died on April 28 in Lenox Hill hospital, New York. Mr. Lyon was born in September, 1865, at Oswego, N. Y. He served as superintendent of motive power of the Chicago Great Western and later as assistant general manager of that road. In 1906 he became assistant to Edwin M. Herr, at that time vice-president of the Westinghouse Electric & Manufacturing Company, and in 1911 Mr. Lyon went to Detroit, Mich., as director of production of the General Motors Company. Since 1926 he was chief engineering adviser of the Chrysler Corporation at New York.

TRADE PUBLICATION

PLATE GIRDER STIFFENER SPACING CHART.—The McClintic-Marshall Corporation, Bethlehem, Pa., has issued a cardboard chart, 6 in. by 9 in., that provides a rapid and accurate graphical method of determining the spacing of stiffeners for plate girders, in conformity with the requirements of the Specifications for Steel Railway Bridges, adopted by the American Railway Engineering Association in March, 1935.

Financial

ATLANTIC COAST LINE.—*Notes.*—Brown, Harriman & Co. and four associated firms have offered, subject to the approval of the Interstate Commerce Commission, $12,000,000 of 10-year collateral trust 5 per cent notes of this company, due 1945, at par.

ATLANTIC COAST LINE.—*Annual Report.*—The 1934 annual report of this company shows net deficit, after interest and other charges, of $495,478, as compared with net deficit of $2,385,787 in 1933. Selected items from the income statement follow:

	1934	1933	Increase or Decrease
RAILWAY OPERATING REVENUES	$39,533,827	$37,908,943	+$1,624,884
Maintenance of way	4,893,109	4,544,777	+348,332
Maintenance of equipment	7,871,133	7,749,820	+121,312
Transportation	14,879,799	13,764,828	+1,114,971
TOTAL OPERATING EXPENSES	30,897,534	29,127,630	+1,769,904
Operating ratio	78.15	76.84	−1.31
NET REVENUE FROM OPERATIONS	8,636,292	8,781,312	−145,020
Railway tax accruals	3,555,000	3,617,000	−62,000
Railway operating income	5,068,414	5,152,048	−83,634
Equipment rents—Net Dr.	795,345	876,843	−81,498
Joint facility rents—Net Cr.	16,487	24,605	−8,118
Non-operating income	3,170,977	1,462,363	+1,708,614
GROSS INCOME	8,239,391	6,614,411	+1,624,980
Rent for leased roads	89,914	89,464	+450
Interest on funded debt	6,008,617	6,282,787	−274,170
TOTAL DEDUCTIONS FROM GROSS INCOME	8,734,870	9,000,000	−265,130
NET DEFICIT	$495,478	$2,385,787	−$1,890,309

BELT RAILWAY CO. OF CHICAGO.—*Annual Report.*—The 1934 annual report of this company shows net income, after interest and other charges, of $298,648, as compared with net income of $48,840 in 1933. Selected items from the income statement follow:

	1934	1933	Increase or Decrease
RAILWAY OPERATING REVENUES	$4,565,384	$4,027,327	+$538,056
Maintenance of way	297,275	261,998	+35,276
Maintenance of equipment	400,403	371,508	+28,895
Transportation—Rail	1,851,730	1,730,336	+121,393
TOTAL OPERATING EXPENSES	2,719,878	2,498,301	+221,577
Operating ratio	59.58	62.03	−2.45
NET REVENUE FROM OPERATIONS	1,845,505	1,529,026	+316,479
Railway tax accruals	355,392	531,811	−176,419
Railway operating income	1,490,015	997,213	+492,802
Hire of freight cars—Dr.	112,728	90,882	+21,845
Non-operating income	803,539	1,036,169	−232,629
GROSS INCOME	2,293,554	2,033,382	+260,172

Continued on next left-hand page

FIREBARS Effect Economies in STATIONARY BOILERS

C. & O. Shops, Newport News, Va.

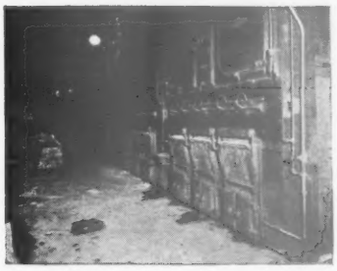
N. Y. Central Power House, White Plains, N. Y.

First Nat'l Bank Bldg., Richmond, Va.

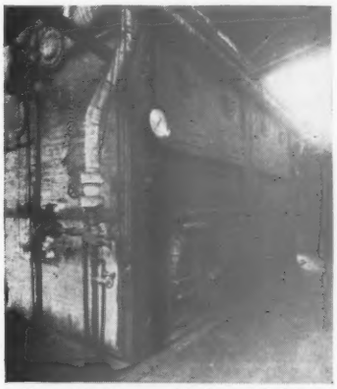
Erie R. R., Jersey City, N. J.

The many economies which Firebars effect in locomotive operation are also being realized in stationary plant boilers. Savings up to 20% in fuel costs are common. The fuel burns more completely, without clinkers, leaving considerably less ash, with resultant lowering of ash handling and removal costs. Replacement of grate units is practically eliminated. Firebars afford ideal firing conditions, are more flexible and require less attention.

C. & O. Pier 15, Newport News, Va.



N. Y. Central, North Bergen, N. J.



C. & O. Shops, Richmond, Va.

R. F. & P. Shops, Richmond, Va.

C. & E. I. Shops, Danville, Ill.

WAUGH FIREBAR

BETTER FIRES

FIREBAR DIVISION
of the
WAUGH EQUIPMENT COMPANY

New York Cleveland Chicago St. Louis

Canadian Waugh Equipment Company, Montreal, Que.

Rent for leased roads	1,765,176	1,758,549	+6,627
Interest on funded debt	1,981	4,342	−2,361
TOTAL DEDUCTIONS FROM GROSS INCOME	1,994,905	1,984,542	+10,363
NET INCOME	$298,648	$48,840	+$249,808

CHESAPEAKE & OHIO.—*Annual Report.*—The 1934 annual report of this company shows net income, after interest and other charges, of $28,062,402, as compared with net income of $28,239,810 in 1933. Selected items from the income statement follow:

	1934	1933	Increase or Decrease
Average Mileage Operated	3,115.05	3,144.19	−29.14
RAILWAY OPERATING REVENUES	$109,489,077	$105,969,522	+$3,519,555
Maintenance of way	11,043,839	11,180,782	−136,942
Maintenance of equipment	19,912,972	18,581,663	+1,331,311
Transportation	24,284,968	23,146,853	+1,138,114
TOTAL OPERATING EXPENSES	60,814,971	58,326,084	+2,488,886
Operating ratio	55.5	55.0	+.05
NET REVENUE FROM OPERATIONS	48,674,106	47,643,437	+1,030,668
Railway tax accruals	10,297,986	9,575,893	+722,092
Railway operating income	38,361,751	38,051,388	+310,362
Equipment rents—Net	148,055	342,388	−194,332
Joint facility rents—Net	1,512,011	1,426,649	−85,361
NET RAILWAY OPERATING INCOME	36,997,795	36,967,127	+30,667
GROSS INCOME	38,051,289	38,675,807	−624,517
Rent for leased roads	36,891	36.706	+185
Interest on funded debt	9,806,272	10,255,980	−449,707
TOTAL DEDUCTIONS FROM GROSS INCOME	9,988,886	10,435,996	−447,109
NET INCOME	$28,062,402	$28,239,810	−$177,407

CHICAGO & EASTERN ILLINOIS.—*Annual Report.*—The 1934 annual report of this company shows net deficit, after interest and other charges, of $1,494,200, as compared with net deficit of $2,020,503 in 1933. Selected items from the income statement follow:

	1934	1933	Increase or Decrease
Average Mileage Operated	938.89	938.89	.....
RAILWAY OPERATING REVENUES	$12,776,550	$12,218,448	+$558,101
Maintenance of way	1,576,796	1,489,744	+87,052
Maintenance of equipment	1,961,683	1,749,788	+211,895
Transportation—Rail	5,084,030	5,047,139	+36,890
TOTAL OPERATING EXPENSES	9,945,373	9,601,058	+344,315
Operating ratio	77.84	78.58	−.74
NET REVENUE FROM OPERATIONS	2,831,176	2,617,390	+213,785
Railway tax accruals	685,000	920,000	−235,000
Railway operating income	2,141,488	1,693,598	+447,889
Equipment rents—Net Dr.	854,116	799,383	+54,732
Joint facility rents—Net Dr.	645,674	686,917	−41,242
NET RAILWAY OPERATING INCOME	641,697	207,297	+434,400
Non-operating income	148,267	134,149	+14,117
GROSS INCOME	789,964	341,446	+448,517
Rent for leased roads	154,624	154,624	.....
Interest on funded debt	1,736,020	1,772,353	−36,333
TOTAL DEDUCTIONS FROM GROSS INCOME	2,284,165	2,361,950	−77,785
NET INCOME (Deficit)	$1,494,200	$2,020,503	+$523,303

CHICAGO & WESTERN INDIANA.—*Annual Report.*—The 1934 annual report of this company shows net income, after interest and other charges, of $191,671, as compared with net income of $427,764 in 1933. Selected items from the income statement follow:

	1934	1933	Increase or Decrease
RAILWAY OPERATING REVENUES	$95,252	$105,902	−$10,649
Maintenance of way	10,519	13,208	−2,688
Maintenance of equipment	357,025	72,252	+284,772
Transportation—Rail	81,639	101,316	−19,677
TOTAL OPERATING EXPENSES	459,521	198,454	+261,066
Operating ratio	482.42	187.39	+295.03
NET LOSS FROM OPERATIONS	364,268	92,551	+271,716
Hire of freight cars—Dr.	1,623	1,058	+565
Non-operating income	4,671,557	4,720,622	−49,065
GROSS INCOME	4,307,289	4,628,070	−320,781
Rent for leased roads	48,457	130,976	−82,518
Interest on funded debt	3,303,822	3,241,531	+62,290
TOTAL DEDUCTIONS FROM GROSS INCOME	4,115,617	4,200,306	−84,688
NET INCOME	$191,671	$427,764	−$236,092

CHICAGO, BURLINGTON & QUINCY.—*New Director.*—Edward Flynn, executive vice-president of this company, has been elected also a director.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—*Abandonment.*—This company has applied to the Interstate Commerce Commission for authority to abandon its line from Brampton, N. D., to Cogswell, 7.49 miles.

CHICAGO, ROCK ISLAND & PACIFIC.—*New Directors.*—Carter H. Harrison, chairman of the protective committee of this company's preferred stocks, and David B. Gann, counsel of the committee, have been elected directors of the company.

COUDERSPORT & PORT ALLEGANY.—*Bonds.*—The Interstate Commerce Commission has authorized this company to issue $100,000 of first mortgage 5 per cent refunding bonds—$94,000 of the issue to be exchanged for a like amount of first mortgage 5 per cent bonds and $6,000 to be pledged as collateral security for short term notes.

DENVER & SALT LAKE.—*Annual Report.*—The 1934 annual report of this company shows net income, after interest and other charges, of $12,493, as compared with net income of $4,146 in 1933. Selected items from the income statement follow:

	1934	1933	Increase or Decrease
Average Mileage Operated	232.34	232.34	.....
RAILWAY OPERATING REVENUES	$1,620,006	$1,657,331	−$37,325
Maintenance of way	93,941	214,819	−120,878
Maintenance of equipment	251,473	276,357	−24,884
Transportation	332,965	301,980	+30,984
TOTAL OPERATING EXPENSES	814,850	889,159	−74,308
Operating ratio	50.30	53.65	−3.35
NET REVENUE FROM OPERATIONS	805,155	768,171	+36,983
Railway tax accruals	166,470	166,811	−341
Hire of equipment—Net	5,362	110,290	+115,652
Joint facility rents—Income	279,839	.....	−279,839
NET RAILWAY OPERATING INCOME	913,122	711,348	+201,774
TOTAL OPERATING AND OTHER INCOME	1,012,952	845,327	+167,624
Rent for leased roads	402,743	403,278	−534
Interest on funded debt	590,000	425,000	+165,000
TOTAL DEDUCTIONS FROM GROSS INCOME	1,000,458	841,181	+159,277
NET INCOME	$12,493	$4,146	+$8,347

DULUTH, MISSABE & NORTHERN.—*Annual Report.*—The 1934 annual report of this company shows net income, after interest and other charges, of $1,346,452, as compared with net income of $10,684,913 in 1933. Selected items from the income statement follow:

	1934	1933	Increase or Decrease
RAILWAY OPERATING REVENUES	$9,486,592	$9,700,200	−$213,607
Maintenance of way	1,465,147	1,130,258	+334,889
Maintenance of equipment	2,468,872	2,012,019	+456,852
Transportation	2,219,868	2,067,371	+152,497
TOTAL OPERATING EXPENSES	6,717,413	5,717,850	+999,562
Operating ratio	70.81	58.95	+11.86
NET REVENUE FROM OPERATIONS	2,769,179	3,982,349	−1,213,169
Railway tax accruals	810,238	601,281	+208,956
Railway Operating income	1,958,535	3,380,964	−1,422,429
Equipment rents and joint facility rents—Net Cr.	23,113	27,269	−4,156
NET RAILWAY OPERATING INCOME	1,981,648	3,408,234	−1,426,586
GROSS INCOME	2,883,706	6,442,984	−3,559,277
Rent for leased roads	1,428,600	1,423,158	+5,441
Interest on funded debt	94,697	130,346	−35,649

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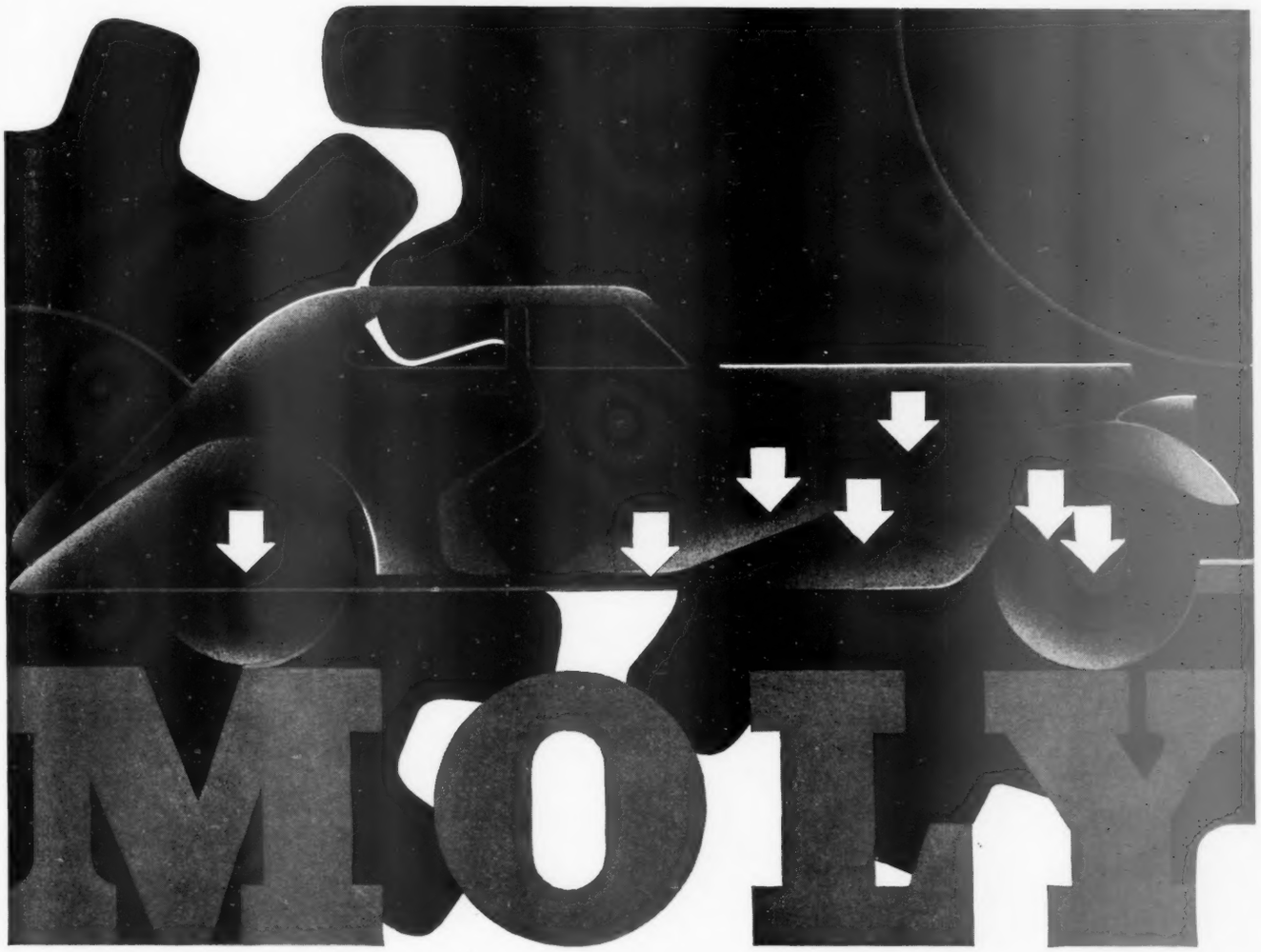

puts vitality into carburizing steels

REAR-END and transmission gears, pinions, cam and crankshafts, spindles, wrist and steering-knuckle pins . . . more is demanded of them than ever before in the history of the automotive industry. Many of the steels on the market are suitable for the carburizing required for such parts facing the stress of high speed, shocks and the fatigue of long periods of continuous heat and action.

But today there must also be considered the important matter of *facility* in the construction of such parts.

SAE 4615 (Nickel Molybdenum) is widely proving itself the most economical and otherwise most desirable steel for carburized gears of all types and other parts requiring the same properties. Good machinability—tough and refined case and core when quenched from the carburizing pot—and small and measurable distortion during heat treating . . . are some of the properties which have led to almost national standardization on this steel for automotive carburized parts.

There is also, of course, the 3.5% Nickel Molybdenum steel for similar, but heavier-duty applications.

Follow the rapid strides being made by "Moly" in most every diversification of the steel and iron industry — by asking to be put on the mailing list of our periodical house organ, *"The Moly Matrix."* Write also for these interesting books: *"Molybdenum in* 1934" and *"Molybdenum in Cast Iron* — 1934 *Supplement."* And, if you've an alloy problem that's difficult to solve, be free to enlist the help of our metallurgists and Detroit experimental laboratory. Climax Molybdenum Company, 500 Fifth Ave., New York City. (In Canada: Railway & Power Engineering Corp., Ltd.)

CLIMAX Mo-lyb-den-um

Total Deductions From Gross Income	$1,537,254	Cr.4,241,929	+5,779,184
Net Income	$1,346,452	$10,684,913	−$9,338,461

Florida East Coast.—*Annual Report.*—The 1934 annual report of this company shows net deficit, after interest and other charges, of $2,806,591, as compared with net deficit of $3,185,634 in 1933. Selected items from the income statement follow:

	1934	1933	Increase or Decrease
Average Mileage Operated	821.52	839.14	−17.62
Railway Operating Revenues	$7,609,611	$6,693,545	+$916,065
Maintenance of way	1,336,501	1,287,840	+48,660
Maintenance of equipment	1,594,653	1,564,765	+29,888
Transportation—Rail	2,388,842	1,931,930	+456,912
Total Operating Expenses	6,142,287	5,538,937	+603,350
Operating ratio	80.7	82.8	−2.1
Net Revenue From Operations	1,467,323	1,154,608	+312,715
Railway tax accruals	766,762	856,566	−92,804
Railway operating income	700,041	294,239	+405,801
Equipment rents—Net Dr.	421,444	383,583	+37,860
Joint facility rents—Net Dr.	53,120	45,565	+7,555
Net Railway Operating Income	225,475	134,910	+360,386
Other income	72,915	*75,112	−2,197
Gross Income	298,391	*59,797	+358,189
Interest on funded debt	3,012,453	3,027,447	−14,993
Total Deductions From Gross Income	92,529	98,390	−5,860
Net Income	*$2,806,591	*$3,185,634	+$379,043

* Deficit.

Kansas City Southern.—*Annual Report.*—The 1934 annual report of this company shows net deficit, after interest and other charges, of $1,009,127, as compared with net deficit of $1,244,546 in 1933. Selected items from the income statement follow:

	1934	1933	Increase or Decrease
Average Mileage Operated	878.78	882.81	−4.03
Railway Operating Revenues	$9,650,064	$9,362,762	+$287,301
Maintenance of way	911,718	951,114	−39,396
Maintenance of equipment	1,644,292	1,639,523	+4,768
Transportation	3,060,842	2,872,491	+188,350
Total Operating Expenses	7,095,617	6,840,697	+254,920
Operating ratio	81.57	83.03	−1.46
Net Revenue from Operations	2,554,447	2,522,065	+32,381
Railway tax accruals	775,509	933,439	−157,930
Railway operating income	1,776,647	1,586,110	+190,536
Equipment rents—Net Dr.	402,438	345,255	+57,183
Joint facility rents—Net Dr.	82,756	79,181	+3,574
Net Railway Operating Income	1,291,452	1,161,673	+129,778
Non-operating income	835,746	719,430	+116,316
Gross Income	2,612,394	2,305,540	+306,854
Rent for leased roads	167,873	168,962	−1,089
Interest on funded debt	2,680,920	2,690,101	−9,181
Total Deductions from Gross Income	3,621,521	3,550,086	+71,435
Net Deficit	$1,009,127	$1,244,546	−$235,419

Minneapolis & St. Louis.—*Receivers' Certificates.*—The Interstate Commerce Commission has authorized the receivers of this company to issue $1,185,000 of receivers' certificates to renew or extend maturing certificates of like amount.

Minneapolis & St. Louis.—*Congressmen Oppose Partition Plan.*—Appointment of a committee to oppose the plan for a partition of this property among connecting lines was authorized at a meeting of 15 members of Congress last week in Washington called by Representative F. H. Hildebrandt, of South Dakota.

Mobile & Ohio.—*Annual Report.*—The 1934 annual report of this company shows net deficit, after interest and other charges, of $1,704,221, as compared with net deficit of $1,549,891 in 1933. Selected items from the income statement follow:

	1934	1933	Increase or Decrease
Railway Operating Revenues	$8,544,827	$8,161,996	+$382,831
Maintenance of way	1,213,736	1,034,886	+178,850
Maintenance of equipment	2,028,755	1,869,915	+158,840
Transportation	3,209,566	3,209,286	+280
Total Operating Expenses	7,434,092	6,828,676	+605,416
Operating ratio	87.00	83.66	+3.34
Net Revenue from Operations	1,110,734	1,333,319	−222,585
Railway tax accruals	336,430	407,483	−71,053
Hire of equipment	419,317	378,427	+40,890
Joint facility rents	379,461	365,456	+14,005
Net Railway Operating Income	30,048*	177,587	−207,635
Non-operating income	58,119	86,234	−28,115
Gross Income	28,071	263,821	−235,750
Interest on funded debt	1,437,418	1,478,169	−40,751
Total Deductions from Gross Income	1,732,292	1,813,713	−81,421
Deficit After Charges	$1,704,221	$1,549,891	+$154,330

* Deficit.

Peoria & Eastern.—*Annual Report.*—The 1934 annual report of this company shows net income, after interest and other charges, of $152,532, as compared with net income of $227,869 in 1933. Selected items from the income statement follow:

	1934	1933	Increase or Decrease
Average Mileage Operated	211.44	211.44	.....
Railway Operating Revenues	$2,217,743	$2,310,712	−$92,968
Total Operating Expenses	1,764,443	1,732,782	+31,660
Operating ratio	79.56	74.99	+4.57
Net Revenue from Operations	453,300	577,929	−124,629
Railway tax accruals	130,893	157,698	−26,805
Railway operating income	322,394	420,231	−97,836
Equipment rents—Net Dr.	134,317	118,075	+16,241
Joint facility rents—Net Dr.	62,403	104,714	−42,310
Net Railway Operating Income	125,673	197,441	−71,767
Non-operating income	41,735	45,966	−4,230
Gross Income	167,409	243,407	−75,998
Total Deductions from Gross Income	14,876	15,537	−661
Net Income	$152,532	$227,869	−$75,337

Pearl River Valley.—*Abandonment.*—This company has applied to the Interstate Commerce Commission for authority to abandon its line from Goodyear, Miss., to Etal, 20.07 miles.

Pittsburgh & West Virginia.—*R.F.C. Loan.*—This company has applied to the Reconstruction Finance Corporation for a three-year extension of its loan of $3,771,788.

Pittsburgh & West Virginia.—*Annual Report.*—The 1934 annual report of this company shows net deficit, after interest and other charges, of $92,269, as compared with net deficit of $106,106 in 1933. Selected items from the income statement follow:

	1934	1933	Increase or Decrease
Railway Operating Revenues	$2,720,146	$2,530,258	+$189,888
Total Operating Expenses	2,003,046	1,713,273	+289,773
Net Revenue from Operations	717,100	816,984	−99,884
Railway tax accruals	242,902	242,513	+389
Railway operating income	474,197	574,471	−100,274
Hire of freight cars—Net	402,651	363,411	+39,239
Joint facility rents—Net	23,072	19,042	−4,029
Net Railway Operating Income	835,971	904,839	−68,868
Non-operating income	14,891	14,618	+272
Gross Income	850,862	919,458	−68,596
Interest on funded debt	901,161	978,800	−77,639
Total Deductions from Gross Income	943,132	1,025,564	−82,432
Net Deficit	$92,269	$106,106	−$13,836

Seaboard Air Line.—*Receivers' Certificates.*—The Interstate Commerce Commission has authorized the receivers of this company to issue $27,859,000 of receivers' certificates, $13,615,000 of which are to be exchanged for matured receivers' certificates, $13,506,000 and $477,000, respectively, to be exchanged for matured and maturing installments of equipment obligations of the Seaboard Air Line and the Georgia, Florida & Alabama, and $261,000

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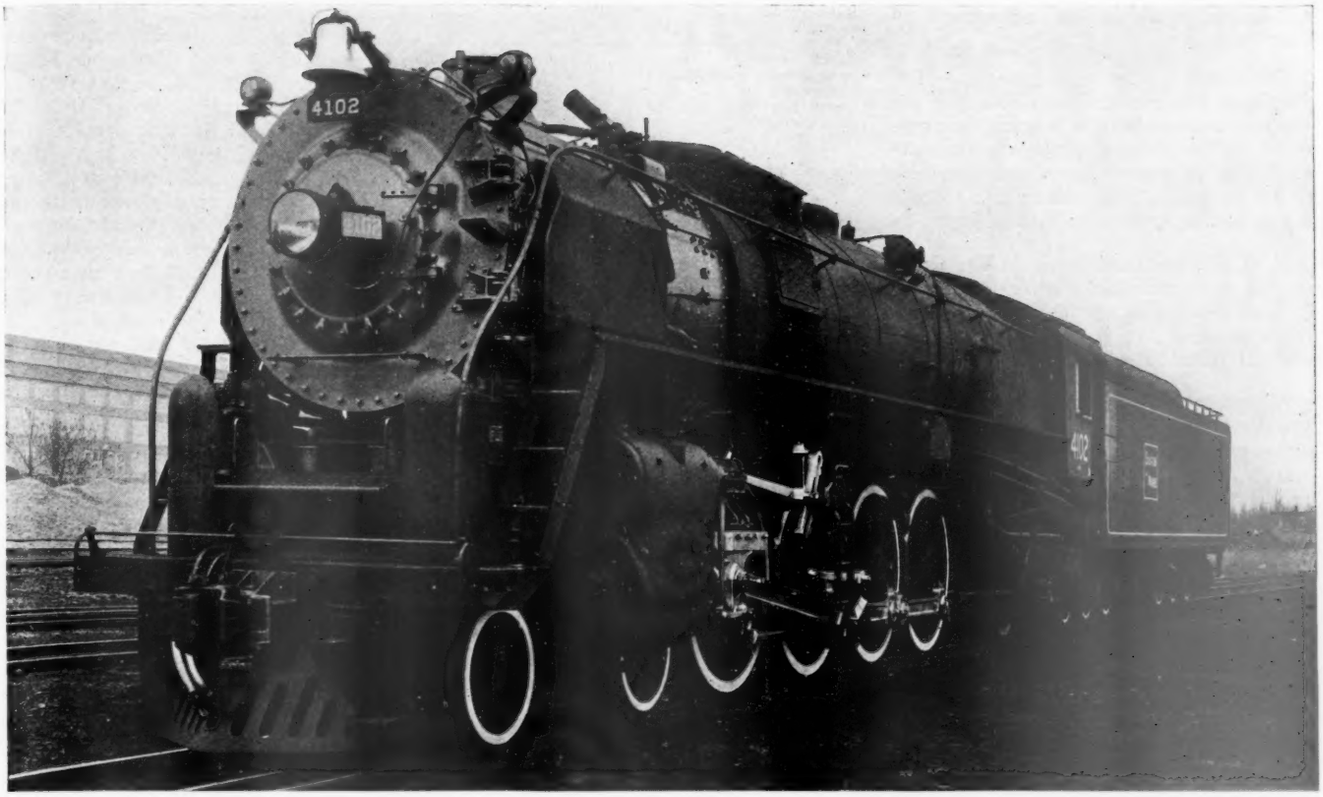


FIVE BALDWIN LOCOMOTIVES FOR THE BOSTON AND MAINE

High potential horsepower and adaptability to either freight or passenger service are the outstanding characteristics of this new power.

These Mountain type locomotives will be assigned to freight service between Boston and Portland, but they will also be used in passenger service at times when travel is exceptionally heavy.

It takes Modern Locomotives to make money these days!

THE BALDWIN LOCOMOTIVE WORKS
PHILADELPHIA, PENNA.

to be delivered in the adjustment of interest.

SOUTHERN PACIFIC.—*Acquisition.*—The Interstate Commerce Commission has authorized this company to acquire the properties of the Peninsular Railway, consisting of a line extending from Mayfield, Calif., to Vasona, 16.3 miles, with switching and street car tracks in San Jose.

T. & N. O.—*Abandonment.*—The Commission has authorized the Texas & New Orleans to abandon a branch line extending from Eunice, La., to Mamou, 9 miles, with 2.1 miles of sidings.

WESTERN PACIFIC.—*Annual Report.*—The 1934 annual report of this company shows net deficit, after interest and other charges, of $1,599,467, as compared with net deficit of $2,087,807 in 1933. Selected items from the income statement follow:

	1934	1933	Increase or Decrease
Average Mileage Operated	1,780.26	1,776.17	+4.09
RAILWAY OPERATING REVENUES	$12,302,903	$10,868,312	+$1,434,590
Maintenance of way	1,898,164	1,658,773	+239,391
Maintenance of equipment	1,906,951	1,895,710	+11,240
Transportation	4,332,185	3,901,745	+430,439
TOTAL OPERATING EXPENSES	9,780,792	8,818,306	+962,486
Operating ratio	79.50	81.14	-1.64
NET REVENUE FROM OPERATIONS	2,522,110	2,050,005	+472,104
Railway tax accruals	792,348	851,194	-58,846
Railway operating income	1,724,340	1,198,111	+526,228
Equipment rents—Net	608,496	472,123	-136,372
Joint facility rents—Net	151,577	179,838	-28,261
NET RAILWAY OPERATING INCOME	1,267,421	905,827	+361,594
Non-operating income	1,876,306	1,828,967	+47,339
GROSS INCOME	3,600,647	3,027,078	+573,568
Rent for leased roads	3,600	3,600	.....
Interest on funded debt	3,318,319	3,385,979	-67,660
TOTAL DEDUCTIONS FROM GROSS INCOME	5,200,114	5,114,886	+85,227
NET DEFICIT	$1,599,467	$2,087,807	+$488,340

WHEELING & LAKE ERIE.—*Annual Report.*—The 1934 annual report of this company shows net income, after interest and other charges, of $1,197,548, as compared with net income of $1,065,049 in 1933. Selected items from the income statement follow:

	1934	1933	Increase or Decrease
Average Mileage Operated	511.60	511.60	.....
RAILWAY OPERATING REVENUES	$11,239,793	$10,563,820	+$675,973
Maintenance of way	1,070,410	1,096,571	-26,161
Maintenance of equipment	3,270,917	3,045,665	+125,252
Transportation	3,411,509	3,028,851	+382,658
TOTAL OPERATING EXPENSES	8,504,959	7,794,603	+710,356
Operating ratio	75.67	73.79	+1.88
NET REVENUE FROM OPERATIONS	2,734,833	2,769,217	-34,384
Railway tax accruals	823,136	966,780	-143,644
Railway operating income	1,909,464	1,801,648	+107,816
Equipment rents—Net	135,919	148,676	-12,757
Joint facility rents—Net	8,716	1,615	+7,101
Non-operating income	252,035	282,873	-30,838
GROSS INCOME	2,161,499	2,084,522	+76,977
Interest on funded debt	684,727	711,527	-26,800
TOTAL DEDUCTIONS FROM GROSS INCOME	963,951	1,019,472	-55,521
NET INCOME	$1,197,548	$1,065,049	+$132,499

Average Prices of Stocks and of Bonds

	May 7	Last week	Last year
Average price of 20 representative railway stocks..	32.36	31.21	42.68
Average price of 20 representative railway bonds..	73.80	72.45	79.08

Dividends Declared

Cincinnati Northern.—$6.00, semi-annually, payable July 31 to holders of record July 21.

Cleveland & Pittsburgh.—Guaranteed, 87½¢, quarterly; Special Guaranteed, 50¢, quarterly, both payable June 1 to holders of record May 10.

Louisville, Henderson & St. Louis.—$4.00, semi-annually; Preferred, $2.50, semi-annually, both payable August 15 to holders of record August 1.

Nashville & Decatur.—7½ Per Cent Guaranteed, 93¾¢, quarterly, payable July 1 to holders of record June 20.

Philadelphia, Germantown & Norristown.—$1.50, quarterly, payable June 4 to holders of record May 20.

Reading.—1st Preferred, 50c, quarterly, payable June 13 to holders of record May 23.

Railway Officers

EXECUTIVE

Mortimer L. Lyles, whose appointment as assistant to the president of the Atchison, Topeka & Santa Fe was noted in the *Railway Age* for May 4, has been connected with this company for 24 years. He was born on August 18, 1893, at Cameron, Tex., and, after a public school and business college education, he entered the service of the Gulf, Colorado & Santa Fe as a stenographer in the superintendent's office at Temple, Tex. He later served as secretary to the superintendent and as clerk in the superintendent's office at Temple, then, on April 26, 1914, being assigned to the general manager's office at Galveston, Tex., as a freight loss and damage investigator. On January 1, 1915, Mr. Lyles was sent to the general office at Chicago, where he served as a clerk and stenographer in the traffic department until January 1, 1918, when he was made secretary to Samuel T. Bledsoe, then assistant general solicitor. Mr. Lyles continued to serve as secretary to Mr. Bledsoe as the latter was advanced through various positions to that of president in 1933. His appointment as assistant to the president became effective on May 1.

Mortimer L. Lyles

S. H. Osborne, division engineer on the Union Pacific at Denver, Colo., whose appointment as assistant to the executive vice-president of the system, with headquarters at Omaha, Neb., was noted in the *Railway Age* of April 20, first entered railway service in April, 1900, with the Oregon Short Line, a unit of the Union Pacific System. Mr. Osborne was advanced through various positions in the engineering department to that of assistant engineer in charge of branch line construction in 1909. He held this position until 1913, when he was further promoted to division engineer of the Idaho division. In December, 1914, he left railway work, but re-entered the service of the Union Pacific in February, 1917, as an assistant engineer in the office of the engineer maintenance of way at Omaha. In December of the same year he was appointed division engineer of the Kansas division, then serving successively in the same capacity on the Nebraska, Los Angeles, and Colorado divisions. On February 15, 1927, Mr. Osborne was appointed engineer maintenance of way at Omaha and, when this office was discontinued in 1931, he returned to the Colorado division as division engineer. He was holding this position at the time of his recent appointment as assistant to the executive vice-president, in which capacity he will have supervision over safety matters.

S. H. Osborne

OPERATING

B. O. Wedge, a trainmaster on the Union Pacific, with headquarters at

Birthplace

Of World-Renowned Control Products

● It is natural and fitting that the world should always associate the name of Automatic Electric Company with the automatic telephone. However, in addition to this extraordinary achievement, the Company has also produced many other products, less spectacular in their success, yet far reaching in their effect.

Today, for example, more than a thousand manufacturers employ Autelco relays to perform varied electro-mechanical functions in their devices. Autelco switches and mechanisms play important roles in air conditioning, food selection, elevator control, railroad signaling, fire alarm systems, radio beacons and in countless other applications. Indeed, it might truthfully be said that the life of every civilized man is influenced and controlled to some degree by Autelco control products.

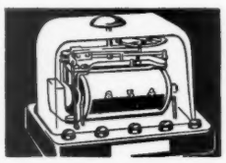
For the benefit of users of Autelco products the Company maintains a consultation service which includes the counsel of technicians thoroughly versed in all phases of electro-mechanical control. Railroad executives are cordially invited to submit their signal, control and related problems to this staff for advice or solution.

●No. 2 of a series of advertisements to acquaint the railroad executive with the history of Automatic Electric Company and to envisage for him the facilities and the background of this world-wide organization which is now producing and developing an extensive range of signal and control products for the railroad industry.

AUTOMATIC ELECTRIC COMPANY

CHICAGO

A recovery check list for railroads



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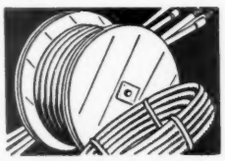

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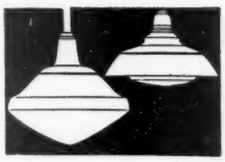
✓ *Line Construction Materials* . . . Pole line construction materials may be ordered, shipped, and assembled economically and conveniently from Graybar.



✓ *Lamps and Lighting* . . . A complete selection of quality lamps, fixtures and glassware is readily available from Graybar. Meets exacting railroad needs.

✓ *Underground Materials* . . . Graybar is the logical source of every type of conduit for railroad use—also conduit fittings, tools, transformers, accessories.

GraybaR QUALITY Since 1869

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ELECTRIC COMPANY

OFFICES IN 76 PRINCIPAL CITIES. EXECUTIVE OFFICES, GRAYBAR BLDG., NEW YORK, N. Y.

Marysville, Kan., has been promoted to assistant superintendent of the Kansas division, with the same headquarters, succeeding **C. E. Hedrix,** who has retired.

L. P. Hopkins, trainmaster on the Coast division of the Southern Pacific, with headquarters at San Francisco, has been appointed assistant superintendent of the San Joaquin division, with headquarters at Bakersfield, Cal., succeeding **D. S. Weir,** deceased. **J. M. Trefren** has been appointed trainmaster of the Portland division, with headquarters at Roseburg, Ore., succeeding **L. Kocher,** who has been transferred to San Francisco, to replace Mr. Hopkins.

FINANCIAL, LEGAL AND ACCOUNTING

Paul Gross, Jr., assistant to the vice-president of the Railway Express Agency, Inc., with headquarters at New York, has been appointed general auditor, Chicago regional accounting department, with headquarters at Chicago, succeeding **S. M. Baker,** who has resigned. **H. M. Sowle,** a special representative of the accounting department at New York, has been appointed general auditor, Chattanooga regional accounting department, at Chattanooga, Tenn., succeeding **John F. Brizzie,** deceased.

Edward L. Copeland, secretary and treasurer of the Atchison, Topeka & Santa Fe, with headquarters at Topeka, Kan., who has retired, as announced in the *Railway Age* of May 4, was born on August 25, 1859, at Winnebago, Ill. Following a public school education, he entered railway service on November 6, 1879, as a clerk in the auditor's office of the Atchison, Topeka & Santa Fe. In 1883, after serving for several years as a clerk in the treasurer's office, Mr. Copeland was appointed assistant cashier and four years later he was made cashier. On January 3, 1906, he was made secretary and treasurer, which position he held continuously until his retirement, except for a period during the World War, when he served as federal treasurer of the Santa Fe.

TRAFFIC

L. B. Woody has been appointed district freight agent for the Seaboard Air Line, with headquarters at Norfolk, Va.

The offices of **F. C. Jerome,** assistant general freight agent, and **R. J. Hopper,** general eastern freight agent of the New York Central, have been moved from 299 Broadway to 466 Lexington avenue, New York City.

Ambrose J. Seitz, general agent, freight department, of the Union Pacific at New York, has been promoted to general freight agent at Kansas City, Mo., to replace **Julian Nance,** deceased, and has been succeeded by **W. T. Burns,** freight traffic agent at Chicago, who in turn has been relieved by **C. E. Shanahan,** secretary to the vice-president in charge of traffic.

Joseph S. Sikora, whose appointment as general freight agent for the Delaware, Lackawanna & Western was noted in the *Railway Age* of April 27, was born at Fall River, Mass. He entered the service of the Lackawanna in July, 1912, as bill clerk in the Hoboken office. Mr. Sikora

Joseph S. Sikora

served successively as revision clerk, rate clerk and chief rate clerk. In 1920 he was appointed rate clerk in the general eastern freight agent's office, with headquarters at New York. In February, 1922, he was promoted to assistant chief rate clerk in the general office at New York and in 1929 he was promoted to chief rate clerk. Mr. Sikora was appointed assistant general freight agent in May, 1931, the position he held until his recent appointment.

ENGINEERING AND SIGNALING

T. J. Jayne, assistant engineer of grade crossings on the New York Central, Buffalo and East, with headquarters at New York, has been appointed acting engineer of grade crossings, with the same headquarters, succeeding **J. G. Brennan,** whose appointment as secretary of the new A.A.R. special grade crossing committee was noted in the *Railway Age* of May 4, page 702.

H. H. Pevler, supervisor of track on the Pennsylvania, with headquarters at Washington, D. C., has been promoted to division engineer of the St. Louis division, with headquarters at Terre Haute, Ind., succeeding **R. H. Crew,** who has been transferred to the Ft. Wayne division, with headquarters at Ft. Wayne, Ind. Mr. Crew succeeds **P. E. Feucht,** whose appointment as superintendent of the Wilkes-Barre division was noted in the *Railway Age* for March 30.

PURCHASES AND STORES

The jurisdiction of **F. J. McMahon,** general storekeeper of the New York Central at Cleveland, Ohio, has been extended over the Indiana Harbor Belt, the Chicago River & Indiana and the Chicago Junction.

OBITUARY

W. A. Hinsey, assistant to the general adjustor of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Milwaukee, Wis., died on May 5 at the age of 80 years, following an operation.

Joseph A. Connell, general attorney and land and tax commissioner for the Chicago, Burlington & Quincy, with headquarters at Chicago, died on May 3 at that point, following a heart attack suffered several weeks previously. Mr. Connell was born on September 11, 1865, in Chicago and was educated in law at the Union College of Law. As a young lawyer Mr. Connell entered the office of Dexter, Herrick & Allen, then counsel for the Burlington. In 1892, Mr. Connell was appointed attorney of the Burlington for Chicago. In 1909, he was appointed attorney for the Illinois district and, in 1929, he was made general attorney and land and tax commissioner, holding these positions until his death.

Edward R. Dickenson, general auditor of the Denver & Rio Grande Western, whose death on April 30 was noted in the *Railway Age* of May 4, was born on November 4, 1864, at Oak Grove, Mo. Following a high school education, he entered railway service in 1882 as a station clerk on the St. Louis-San Francisco. During the next ten years Mr. Dickenson served with the Frisco, the Texas & Pacific, the Mexican Central, and the Chicago, Burlington & Quincy, holding such positions as construction material clerk, track foreman and paymaster's clerk. At the end of this period, Mr. Dickenson went with the Denver & Rio Grande, serving successively as a clerk, traveling auditor, traveling accountant, chief clerk, and secretary and auditor until 1920, when he was appointed general auditor. He held the latter position continuously until the time of his death.

Luther M. Hogsett, general freight agent of the Fort Worth & Denver City, died at his home at Fort Worth, Tex., on May 5. Mr. Hogsett was born on January 31, 1879, at Missouri City, Mo. He entered railway service on November 1, 1898, as a clerk with the Houston & Texas Central (now part of the Southern Pacific), serving with this company in various clerical capacities until 1905, when he went with the Chicago, Rock Island & Gulf, as assistant rate clerk. In the following year he was made chief rate clerk of this company and, in 1907, he went with the Trinity & Brazos Valley in the same capacity. In 1908, Mr. Hogsett was appointed chief clerk in the traffic department of the latter road at Houston, Tex. In 1911, he went with the International-Great Northern as assistant general freight agent, being advanced to general freight agent at Houston in 1918. During federal control of the railroads Mr. Hogsett served as assistant general freight agent for a group of southwestern railroads, with headquarters at Dallas, Tex. When the railroads were returned to their owners in 1920, he went with the Texas & Pacific as general freight agent at Dallas. In 1926, he entered the service of the Fort Worth & Denver City as general freight agent at Fort Worth, holding this position continuously until his death.

Annual Report of the New York Central Railroad Company

To the Stockholders of
THE NEW YORK CENTRAL RAILROAD COMPANY:

The Board of Directors herewith submits its report for the year ended December 31, 1934, with statements showing the income account and the financial condition of the company.

The Year's Business

There were increases in the more important items of transportation and incidental revenues, reflecting a slight improvement in business conditions, particularly during the early months of the year.

Operating revenues amounted to $295,084,881.29, an increase of $11,743,778.92 (4.14%).

Revenue freight handled amounted to 100,115,111 tons, an increase of 8,866,765 tons (9.72%). Freight revenues were $204,155,073.58, an increase of $9,868,530.01 (5.08%). There were increases in the tonnage of all groups with the exception of agricultural products.

The company carried 45,495,809 revenue passengers, an increase of 477,297 (1.06%), divided as follows: interline passengers 114,249 an increase of 6.51% and local passengers 685,174 an increase of 5.91% offset by a decrease in commutation passengers of 322,126 or 1.02%. Revenue from passengers amounted to $54,752,611.79, an increase of $1,520,803.83 (2.86%).

Net railway operating income was $29,160,928.11, a decrease of $4,108,234.34.

Operations for the year resulted in a deficit of $7,682,334.56, after charges for depreciation and retirements of equipment, of $14,808,074.37 and $92,093.64, respectively.

Income Account for the Year

Including Boston & Albany Railroad, Ohio Central Lines, Michigan Central Lines, Big Four Lines, and All Other Leased Lines

	Year ended Dec. 31, 1934	Year ended Dec. 31, 1933	+Increase or −Decrease
OPERATING INCOME	11,399.04 *miles operated*	11,413.82 *miles operated*	−14.78 *miles*
RAILWAY OPERATIONS			
Railway operating revenues	$295,084,881.29	$283,341,102.37	+$11,743,778.92
Railway operating expenses	224,171,759.94	207,923,294.20	+16,248,465.74
NET REVENUE FROM RAILWAY OPERATIONS	$70,913,121.35	$75,417,808.17	−$4,504,686.82
Percentage of expenses to revenues	(75.97)	(73.38)	+(2.59)
Railway tax accruals	$24,836,981.06	$26,456,636.66	−$1,619,655.60
Uncollectible railway revenues	178,056.42	173,395.72	+$4,660.70
RAILWAY OPERATING INCOME	$45,898,083.87	$48,787,775.79	−$2,889,691.92
Equipment rents, net debit	$11,980,672,52	$11,592,638.33	+$388,034.19
Joint facility rents, net debit	4,756,483.24	3,925,975.01	+830,508.23
NET RAILWAY OPERATING INCOME	$29,160,928.11	$33,269,162.45	−$4,108,234.34
MISCELLANEOUS OPERATIONS			
Revenues	$834,820.27	$683,664.27	+$151,156.00
Expenses and taxes	640,047.30	548,974.58	+91,072.72
MISCELLANEOUS OPERATING INCOME	$194,772.97	$134,689.69	+$60,083.28
TOTAL OPERATING INCOME	$29,355,701.08	$33,403,852.14	−$4,048,151.06
NON-OPERATING INCOME			
Income from lease of road	$139,008.07	$131,177.64	+$7,830.43
Miscellaneous rent income	4,989,741.25	4,182,542.61	+807,198.64
Miscellaneous non-operating physical property	1,937,052.28	2,594,910.99	−$657,858.71
Separately operated properties—profit	348,652.81	385,163.44	−36,510.63
Dividend income	7,387,682.39	6,594,446.90	+793,235.49
Income from funded securities and accounts	6,009,557.66	5,081,151.97	+928,405.69
Income from unfunded securities and accounts	1,884,301.60	2,079,935.91	−195,634.31
Income from sinking and other reserve funds	169,105.33	185,647.61	−16,542.28
Release of premiums on funded debt	28,413.55	30,911.40	−2,497.85
Miscellaneous income	328,318.54	121,559.71	+206,758.83
TOTAL NON-OPERATING INCOME	$23,221,833.48	$21,387,448.18	+$1,834,385.30
GROSS INCOME	$52,577,534.56	$54,791,300.32	−$2,213,765.76
DEDUCTIONS FROM GROSS INCOME			
Rent for leased roads	$26,282,477.93	$26,423,121.65	−$140,643.72
Miscellaneous rents	1,046,524.50	1,250,090.17	−203,565.67
Miscellaneous tax accruals	444,534.36	400,369.65	+$44,164.71
Separately operated properties—loss	12,947.37	41,435.96	−28,488.59
Interest on funded debt	28,744,885.44	28,153,486.57	+591,398.87
Interest on unfunded debt	3,581,175.53	3,792,577.89	−211,402.36
Maintenance of investment organization	14,699.90	11,175.95	+3,523.95
Miscellaneous income charges	132,624,09	131,556.19	+1,067.90
TOTAL DEDUCTIONS FROM GROSS INCOME	$60,259,869.12	$60,203,814.03	+$56,055.09
NET DEFICIT	$7,682,334.56	$5,412,513.71	+$2,269,820.85

Profit and Loss Account

BALANCE TO CREDIT OF PROFIT AND LOSS, DECEMBER 31, 1933		$225,981,639.18
ADDITIONS:		
Profit on property sold	$145,266.53	
Profit on securities sold	96,366.42	
Accounting adjustments in connection with sundry properties in Grand Central Terminal area	401,620.00	643,252.95
		$226,624,892.13
DEDUCTIONS:		
Deficit for the year 1934	$7,682,334.56	
Depreciation prior to July 1, 1907 on equipment retired during the year	567,191.81	
Loss on property retired	2,673,690.16	
Unamortized discount on funded debt	526,851.29	
Retirement of equipment	14,907,366.73	
Expenses in connection with various abandoned projects	271,377.11	
Sundry adjustments (net), unrefundable overcharges, uncollectible accounts, etc.	96,618.21	26,725,429.87
BALANCE TO CREDIT OF PROFIT AND LOSS, DECEMBER 31, 1934		$199,899,462.26

Changes in Capital Stock

The Board of Directors by resolutions adopted February 21, 1934, and the Stockholders by resolution adopted at a Special Meeting held on April 24, 1934, authorized changing the authorized capital stock of the Company, consisting of 7,000,000 shares of the par value of $100 each, of which 4,992,597⅝ shares had been issued, into the same number of shares without par value; the substitution, share for share, of 4,992,597⅝ of the shares without par value for the issued par value shares; the increase of the number of shares authorized from 7,000,000 to 10,000,000, all without par value; the issue of the resulting 5,007,402⅜ shares of authorized but unissued stock without par value for lawful purposes of the Company from time to time as authorized by the Board of Directors; and the fixing of the stated capital of the Company, at the effective date of the change, at $499,259,740 and after deducting $50.50 scrip in the Treasury the stated capital became $499,259,689.50. These changes were made effective on May 9, 1934, by the filing on that date of the necessary certificates or amendatory articles in the office of the Secretary of State of each of the States in which the Company is incorporated. Of the authorized but unissued shares 1,497,777½ shares are reserved for conversion of the Ten-Year 6% Convertible Secured Bonds.

West Side Improvements, New York City

During the year the entire new elevated structure south of 30th Street and the new St. Johns Park Freight Terminal at Spring Street were completed and placed in service. Legislation was enacted during the year authorizing a special loan by the State, which, together with the funds provided by the Grade Crossing Elimination Act, permits the completion of the improvement north of 30th Street, including the reconstruction of the 30th Street freight terminals, new depressed roadway between 30th and 60th Streets, the elimination of the grade crossings at 79th and 96th Streets and the covering of the tracks between 70th and 79th Streets in connection with the City's Express Highway.

Elimination of Grade Crossings at Syracuse, N. Y.

Pursuant to orders from the public authorities, work is progressing for the elimination of 59 street grade crossings in the City of Syracuse under the plan contemplating the removal of the main line tracks from the occupation of city streets and the construction of a new elevated main line generally following the old route of the West Shore Railroad to the north. It is expected the project will be completed and put into operation during 1937.

For the Board of Directors,
F. E. WILLIAMSON,
President.

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